





Fig. 1.



Fig. 2.

ON
DISEASES
INCIDENTAL TO CHILDREN
 IN
HOT CLIMATES.

A MANUAL FOR PHYSICIANS AND PARENTS
 EMIGRATING TO TROPICAL COLONIES.

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 IRELAND.

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P R E F A C E.

No branch of a physician's functions in tropical colonies is accompanied with more trouble and difficulty than to treat with success the diseases incident to children, a fact, which in my opinion may be attributed to four principal causes. *First*: hitherto there has been no literary source, which explained the influence of a hot climate on the development of organic systems. Hence it comes, that medical men, who have lately arrived in tropical climates, embrace erroneous opinions on several morbid phenomena, peculiar to infantile age within an atmosphere continually hot, but which are innoxious and only the sanative exertions of nature. — *Secondly*: the children of tropical colonies belong to races widely differing the one from the other, a circumstance, which

entangles the diagnosis in respect to hereditary and acquired disposition to diseases, their specific differences and external marks. — *Thirdly*: most European mothers in tropical colonies nurse and educate their children in a manner altogether at variance with the climate, and amongst the Creoles there are many, who commit the duties of the nursery, — duties which naturally devolve on themselves, — to black maid-servants and not unfrequently to slaves. The obstacles hence arising against the success of medical treatment are innumerable and often insurmountable to physicians, in spite of their utmost efforts. — *Fourthly*: the medicines recommended by European authors for the diseases of children do not always effect the same results in tropical as in temperate climates. Some of these lose their efficacy when brought from Europe, and others appear to be injurious to infantile organization from the fervency of tropical heat and are only to be used with the utmost circumspection.

The official station which I filled, during a period of twelve years, as town-physician, accoucheur, physician to the two orphanhouses

of Samarang and inspector of vaccination, afforded me a daily opportunity of attending the children of various races in a sick as well as in a healthy state, and having but seldom failed to note down in a journal my physiological and pathological observations in respect to infantile life, I hope, inferior as my medical knowledge may be, to be able to proffer some valuable *etiological*, *prophylactical* and *therapeutical* observations on the diseases of children bred in tropical climates. With this hope I wrote the following treatise, which I have divided into two books. In the first and more difficult book I endeavoured to show, what influence a hot climate has on the development of the organic systems of the human body and how, in accordance with it, *white* children born in a hot country should be brought up. This part is principally designed for the information of European parents, who intend going to or are already settled at any tropical establishment. — In the second book I have laid open the results of my twelve years' practice in Java, as far as concerns infantile age, in order to furnish physicians, who have lately

arrived in hot countries, with a guide to regulate, in some measure, their medical treatment at the sickbed of children.

Besides, I hope, that the publication of this treatise will attract the attention of physicians in Europe, in so far as the matter treated of is new and of general importance to medical science. Destitute, however, as I have been of a predecessor, whose investigations I could have followed, I request the kind reader, to consider my work only as an essay far from making claim on perfection.

Bonn, February 15th 1843.

F. A. C. Waitz M. D.

Address to C. Georgi.

First Book.

General observations on infantile life between the tropics.

Part. I.

The influence of a hot climate on the development of
organic systems.

Introduction.

	Page.
Climatical impression is modified by <i>nativity, descent,</i> <i>diet and age.</i>	1

Chapter 1.

The skin.	7
a. Native appearance.	7
b. After-mutations.	8
c. Function.	14
d. Diseases.	19
e. Sanative and reproductive power.	21

Chapter 2.

The internal tunics.	23
A. The mucous tunics.	23
a. The <i>mucosa</i> of the respiratory organs.	24
b. The <i>mucosa</i> of the digestive organs.	27
c. The <i>mucosa</i> of the urinary and genital organs.	30

	Page
B. The serous tunics.	31
C. The fibrous tunics.	33

Chapter 3.

The bones.	34
a. Formation of bones.	35
b. Growth of bones.	36
c. Accidental diseases of bones.	38
d. Ossification of cartilages.	40

Chapter 4.

The muscles.	41
a. Germinant muscularity.	41
b. Florid muscularity.	42
c. Mature muscularity.	43

Chapter 5.

The vessels.	44
A. The lymphatics.	45
B. The blood-vessels.	48

Chapter 6.

The nerves.	52
---------------------	----

Chapter 7.

The lungs and liver.	56
A. The lungs.	56
B. The liver.	64

Chapter 8.

The teeth, salivary glands and intestinal canal.	67
1. The teeth.	67
2. The salivary glands.	68

	Page
3. The stomach.	69
4. The small intestines.	70
5. The large intestines.	70

Chapter 9.

The kidneys, bladder et genitals.	73
A. The kidneys and bladder.	73
B. The genitals.	76

P a r t. II.

Precepts for nursing and bringing up *white* children in hot countries.

Introduction.

The offspring of Europeans between the tropics can be bred a race healthy and strong.	79
--	----

Chapter 1.

Management of the umbilical cord.	83
---	----

Chapter 2.

Bathing, cold affusion and inunction.	88
---	----

Chapter 3.

Dress.	93
----------------	----

Chapter 4.

Sleep.	101
----------------	-----

Chapter 5.

Exercise in the open air.	109
-----------------------------------	-----

	Page
Chapter 6.	
Lactation.	113
A. Laction by the mother.	114
Regimen for <i>white</i> mothers, who nurse their own chil-	
dren in tropical countries.	116
B. Lactation by a nurse.	123
Remarks on choosing and engaging a wet-nurse in	
tropical countries.	127

Chapter 7.

Nursing without suck.	130
Foods to be tried for that purpose between the tropics.	133

Chapter 8.

Delactation and after-nutrication.	142
A. Delactation.	142
B. After-nutrication.	146
Beverage for little children in tropical countries.	149

S e c o n d B o o k.

**The results of my twelve years' practice in
Java respecting the diseases of children.**

Introduction.

Clinical rules to be observed in infantile diseases of hot countries.	153
--	-----

Section I.

Morbid conditions met with <i>before</i> the cutting of milk-teeth.	163
A. Congenital defects.	163

	Page
1. Hare - lip.	163
2. Tied tongue.	164
3. Groin - rupture.	164
4. Imperforation of the fundament.	164
5. Club - feet.	165
6. Naeves.	166
B. <i>Accidents occurring at or some days after birth.</i>	166
7. Premature birth.	166
8. Suspended animation.	167
9. Swollen head.	170
10. Swollen head by extravasation of blood.	170
11. Skull - bones lapping over.	171
12. Fracture.	172
13. Slight wounds by the forceps.	173
14. Swollen breasts.	173
15. Bleeding at the navel.	174
16. Navel - gleet.	175
17. Navel - rupture.	176
18. Jaundice.	177
19. Chafing.	178
20. Want of urinary excretion.	179
C. <i>Accidents occurring some weeks or months after birth.</i>	179
21. Costiveness.	179
22. Colic.	181
23. Vomiting.	182
24. Diarrhoea.	185
Bilious diarrhoea.	
Acid diarrhoea.	
Lientery.	
Bloody diarrhoea.	
Diarrhoea symptomatic of thrush.	
Paralytic diarrhoea.	
25. Cholera.	190
26. Thrush.	191
27. Convulsions.	199
28. Trismus (locked jaw) and tetany.	201
29. Periodic pulmonary spasm.	201
30. Pulmonary catarrh.	202

	Page
31. Erysipelas (with total intumescence of the body).	203
32. Vesicular eruption.	205
33. Scurf on the face.	205
a. Milk - scurf.	206
b. Serpiginous scurf.	206
34. Prickly heat.	208
35. Inflammation of the eye-lids.	208

Section II.

Morbid conditions most frequently met with <i>during</i>	
the cutting of milk-teeth.	211
A. <i>Affections of the chylopoetic organs.</i>	211
36. Inflammation in the upper part of the intestinal canal.	211
37. Inflammation in the lower part of the intestinal canal.	214
a. Catarrhal diarrhoea.	214
b. Bloody dysentery.	215
c. White or dry dysentery.	217
38. Inflammation of the liver and biliary ducts.	218
39. Bloody diarrhoea.	220
40. Bilious diarrhoea.	227
41. Atrabilarious diarrhoea.	228
42. Mesenteric atrophy.	228
43. Intestinal ulcers.	231
44. Piles.	232
45. Prolapsus ani.	233
B. <i>Affections of the brain.</i>	233
46. Simple cerebral fever.	233
C. <i>Affections of the skin and joints.</i>	235
47. Furuncles.	235
48. Inflammation of the hip-joint.	237

Section III.

Morbid conditions most frequently met with <i>after</i>	
the cutting of milk-teeth.	241
A. <i>Affections of the spleen, salivary glands, bronchiae and</i>	
eyes.	241

	Page
49. Inflammation of the spleen.	241
50. Mumps.	242
51. Hooping - cough.	244
52. Ophthalmia.	246
a. Blepharophthalmia.	247
b. External ophthalmia.	248
c. Dacryocystitis.	249
d. Iritis.	249
B. <i>Affections of the skin.</i>	250
a) <i>Acute eruptions.</i>	250
53. Cow - pox.	250
C. with miliary eruption.	253
54. Small pox.	254
55. Modified small pox.	255
56. Chicken - pox.	256
57. Shingles.	256
58. Measles.	257
M. followed by purulent diarrhoea.	259
59. Red measles.	259
60. Universal redness (pseudo - scarlet eruption).	260
61. Nettle - rash.	260
b) <i>Chronic eruptions.</i>	260
62. Scald head.	260
C. <i>Affections of the urinary organs.</i>	261
63. Incontinence of urine.	261
64. Gravel and stone in the bladder.	261
65. Slimy urine with blood.	262
66. Consumption of the bladder.	262
D. <i>Intestinal worms.</i>	263
67. Maw - worm.	263
68. Hair - tailed worm.	264
69. Long round worm.	264

Section IV.

Morbid conditions less frequently met with in childhood than in full age.	267
---	-----

	Page
A. <i>Fevers.</i>	267
a) <i>Agues (intermittent fevers).</i>	267
70. Catarrhal ague.	268
71. Gastric-bilious ague.	269
72. Cephalic ague.	269
b) <i>Remittent fevers.</i>	270
73. Common catarrhal fever.	271
74. Soporose bilious fever.	272
75. Sun-stroke (siriasis).	273
B. <i>Excessive and suppressed secretions.</i>	274
76. Asiatic cholera.	274
77. Choleric diarrhoea (choleroïda).	276
78. Bilious vomiting.	277
79. Jaundice of adults.	278
C. <i>Chronic eruptions of the skin.</i>	278
80. Tetters.	278
81. Itch.	280
82. Venereal eruption.	281
83. Raspberry-like eruption.	282
84. Leprosy.	284

Appendix.

A formulary of medicines which proved very useful for children in my Java practice.	287
--	-----

F i r s t B o o k .

General observations on infantile life between
the tropics.

First Book

General observations on the habits of the
the people.

F i r s t P a r t.

**The influence of a hot climate on the development
of organic systems.**

Introduction.

The peculiarities of climate, by which the hot or tropical zone differs from the temperate and cold, are:

- 1) a greater attraction of the celestial bodies;
- 2) a swifter rotatory motion of the globe;
- 3) a clearer day-light;
- 4) a more regular return of the day-light (or, the length of days and nights more equal);
- 5) a brighter moon and star-light;
- 6) a more perpendicular direction and consequently a more intense power of the sun beams;
- 7) a constantly warm atmosphere (an everlasting summer of tropical low-lands, and an everlasting spring of tropical mountains);
- 8) a more expanded (thinner) atmospherical air;
- 9) a more evident rising and sinking of atmo-

spherical electricity from morning to noon and from noon to night;

10) a more important annual change of atmospheric dryness and moisture;

11) a more constant and considerable evaporation of the ground, especially on the coasts of tropical countries and in islands.

The favourable or bad impression on health resulting from those peculiarities of climate is modified by *nativity*, *descent*, *diet* and *age*. Those who are born at a high geographical latitude, suffer, of necessity, greater disadvantage from these than the natives of tropical countries, because not inured to them. — Creoles or *white* natives are more strongly influenced than the coloured or such, as have a *yellow*, *red*, *brown* and *black* skin, as they are descended from the natives of colder countries and, in a great measure, inherit their constitution. — Tight clothes, heating aliments and spirituous drinks do more harm in tropical than in cold countries, because they add to the noxious influence of the atmospheric heat. — Children and old men are proportionably better in warm than in cold regions, in so far as a perpetuity of heat agrees with the smaller quantity of vital warmth in their bodies.

Little children in tropical countries are allowed, moreover, to spend the greater portion of the day in the open air, and are free from the molesting burden of close garments, — a double

advantage, securing them against the pernicious consequences of a confined air in chambers and a restrained muscular motion. Nay more, it may be considered as a benefit to children, that a regular return of the daylight facilitates a proper mode of nursing.

Supposing we were to appreciate climate from the multitude of dangers, which surround the earliest period of childhood, a new-born child of the hot zone is to be deemed luckier than that of the temperate and cold zones; as the former is more likely to attain the usual period of human life, than the latter. To substantiate the truth of this we have only to examine, in what different conditions two *foetusses* arrive in the world, one of whom is born in a low district between the tropics, and the other in the beginning of winter near the northern polar circle. Both are leaving a habitation, where they have vegetated in continual darkness and in a temperature of 96° Fahrenheit. The *former* already perceives the daylight at the very moment of birth or a few hours after, and enters into an atmosphere, the temperature of which in the shade is almost equal to the warmth of the mother's blood. The *latter*, on the contrary, is not ushered into the daylight, until two months after birth, and then into an atmosphere, the temperature of which is 60° Fahr. below that of the womb. Thus the condition of the *former* appears to be much more

favourable than that of the *latter*. Indeed, were there exact lists of mortality in tropical countries and could we compare these with European lists, it would be found, that the mortality of newborn children is less in tropical than in temperate climates, and it has already been matter of fact, that the mortality of new-born children in Europe is much less in summer than in winter.

Were we to appreciate climate otherwise than we have now done, and were we to take mind as our standard, it would at once appear, that the native of the temperate zone has an advantage over those, who are born between the tropics. For although it happens more frequently there than here, that children die before attaining to the usual term of life, yet a higher display of the three noblest organs: *brain*, *heart* and *lungs* seems to be less counterinfluenced by the temperate than the torrid zone.

The following chapters contain a more detailed exposition on the subjects, which we have now alluded to.

First Chapter.

The skin.

Of all the parts of the human frame the skin shows the most striking impressions of the influence of climate. Hence it is, that I have dedicated to it the first chapter of this book.

a. *Native appearance of the skin.*

The skin of new-born children on their entering into the world is more or less covered with a cheesy substance (*vernix caseosa*), taken by some physiologists for a precipitate of the *liquor amnii*, by others for a produce of cutaneous secretion commencing a little while before birth. Without expatiating on this topic I may observe, that none of those children, at whose birth I assisted, while in tropical India (the number having been 192), were wholly without this substance, and I may further remark, that I found it in a greater proportion on robust and mature children than on infirm and premature ones. The colour of the cheesy matter was invariably white, whether the child belonged to the *Caucasic*, *Malay*, *Ethiopic* or mongrel *Chinese* race.

As soon as the cheesy matter is removed by washing, the skin exhibits its native hue, which

is universally *reddish*, with this exception, that it appears a little darker on the scrotum, labia pudenda, anus and nipples of those children, whose parents are dark-coloured, than on those who are of genuine European descent. The ancients called this phenomenon „*the redness of new-born children*“, which may be imputed to an abundant determination of blood towards the surface of the new-born body and to a pellucid thinness of its epidermis, either partly derivable from a previous impression of the warm *liquor amnii*, in which the infantile frame had been surviving but a few minutes before ^a).

b. *After-mutations of the skin.*

The infantile skin being influenced, from the first moment of birth, by *daylight* and atmospherical *oxygen*, by and by changes its native organization and appearance in the following manner.

1) *The cuticle (epidermis) of new-born children exfoliates and renews itself.*

In a perpetually warm atmosphere this operation is more imperceptible and sooner accomplished than in a variable and cold climate, —

a) The celebrated *van Swieten* (Comment. in Boerhavii aphor. morborum infantum pag. 575) expresses himself thus about the native colour of the skin: „*Haec cutis rubedo aequè manifesta est in Aethiope ac in Europaeo, et vulgo creditur, eo nitidiorem ac pulchriorem cutem futuram postea, quo magis rubicunda fuerit in recens nato.*“

whence it comes, that new-born children within the tropics are much less subject to *chafing* (*intertrigo*) and painful *excoriations*, than those without. According to *Ch. Billard*, a Parisian physician, the period of cuticular exfoliation within Europe lasts generally more than two months after birth, and is frequently characterized by a stripping of considerable pieces of the cuticle, on various points of the periphery. In tropical India I never saw it last above three or four weeks, and rarely betray itself by distincter traces than dusty or branny scales loosened from the skin ^b).

2) *The renewed cuticle of new-born children grows thicker and denser with advancing age.*

The increase of its *thickness* is much favoured by atmospherical heat, the increase of its *denseness* by atmospherical cold. — After comparing the skin of white children, from two to three years old, born in opposite climates, no one can doubt, but that the former of these atmospherical influences takes place. At that age the cuticle (e. g.) of those *white* children, who are born in Java, has altogether or almost lost the transparent redness of the subjacent little blood-vessels, whereas the cutaneous surface, especially of the cheeks of those, who have been brought to light

b) *Ch. Billard* traité des maladies des enfans nouveau nés etc. Paris. 1828. Art. *Exfoliation de l'épiderme.*

in Europe, commonly shows a charming blush proportionate to the health. Such, I believe, argues that the cuticle of the former has grown thicker than that of the latter, or which is the same, the cuticle of the latter continues thinner than that of the former. A similar difference of cuticular thickness is obvious at adult age on those Europeans, who have been accustomed to a tropical climate, and those, who have lately arrived within the tropics. When undertaking a topical venesection of the former by means of cupping-glasses, it is necessary to extend the springlancet about a good line, lest the vessels of the skin escape being opened, the same measure not being requisite for the latter, a circumstance which evidently proves, that the cuticle of the former is thicker than that of the latter.

The cutaneous outside of *European* children carried over to tropical countries, compared by our touch with the outside of *Creoles* or such European children, who are born there, will convince us moreover, that an increase of cuticular *thickness* effected by atmospherical heat is joined to less cuticular *denseness* or more looseness (porosity). The skin of the latter children generally feels softer, suppler and more pliable than that of the former, or, which is the same, the skin of the former generally feels harder, rougher and more brittle than that of the latter. Were such a comparison made with a microscope, the cuta-

neous pores of the latter will likewise appear larger than those of the former.

3) *The Malpighian mucus between the epidermis and cutis* (wrongly named „*Malpighian net*“ after its discoverer), of which in the foetus as little traces are visible as of the pulmonary vesicles, commences displaying itself after birth.

We may *a priori* suppose this display to be prompter and more perfect in hot than in cold and variable climates, after what has already been said about atmospherical heat influencing the cuticle, of which the *Malpighian mucus* is only a substratum. But how it comes, that this substance attains to a different degree of thickness in different races living in the same climate, can only be guessed, I think, from the change of colour sooner or later effacing the native redness. Perhaps the ensuing observations, which I made in Java, are not quite worthless in this respect.

The number of new-born *Negroes* (of the Mosambic tribe), which I had an opportunity of knowing, amounted to *four*. Their redness inclined to an olive colour (*icteric*) from the third or fourth day after birth, and converted itself into dark-brown in the second month of existence.

The number of new-born *Malay* or *Javanese* I knew, exceeded *forty*. Their redness inclined to light-brown from the third or fourth day after

birth, and did not change into the tawny colour of the Javanese before the third month of life.

The number of new-born *mongrel Malay* (from a European or Chinese father and Malay mother), I knew, amounted to about *seventy*. Their redness inclined to an orange colour from the fourth or fifth day after birth, and passed to various gradations of a yellow and sallow four or five months after.

The number of new-born *Creoles* (genuine descendants from Europeans), I knew at Samarang, was not less and are separable into *dark-* and *blue-eyed*. The redness of the former inclined to yellow or was about an orange colour from the fifth or sixth day after birth. The admixture of red, however, disappeared with the sixth or seventh month of life, from which period they maintained a pale yellow appearance. As to the *blue-eyed* Creoles, their skin appeared less icteric in the first weeks after birth, but continued slightly tinged with pure red until the second or third year, when it commonly had assumed that characteristic glossy paleness, which by some writers is named „tropical“ (*pallor tropicus*) and is not to be confounded with *chlorotic* paleness, a known symptom of distemper, whereas the pale complexion of tropical Europeans proves a mark of better health than red cheeks ^{c)}.

c) It may seem curious, but has several times been observed by me in Java, that the *first* begotten child of a *blue-eyed*

From the foregoing statements we learn, that children of *dark-coloured* parents sooner lose their native redness than children of *white* parents. Hence we may conclude, from what has already been stated, that the Malpighian mucus of the former is earlier displayed than of the latter. Add moreover, that a dark skin at adult age, when examined by touch, feels softer and smoother than a white skin, we can no longer doubt, that the mucous substratum of the former arrives at a higher perfection than that of the latter, a fact, which accords with anatomical researches and may be thus explained.

Suppose the cuticle, together with the invisible rudiment of the subjacent Malpighian mucus, to be primitively formed of a more *phlogistic* or *venous* blood in children of dark-coloured than white parents. If such be the case, we are allowed on chymical principles to conclude, that the skin of the former has a greater attraction to atmospheric oxygen and absorbs more of it in the earlier days after birth, than the skin of the latter. The consequence of which would be a greater degree of thickness and looseness of the cutaneous tissue ^d).

European man and mongrel Malay woman (who had a European father and Malay mother) commonly is *dark-eyed*; the *second* less dark-eyed; the *third* *blue-eyed* and light-haired.

d) Even the inoculation of cow-pox in Java has afforded me

A similar explanation has been given by Professor *Joerg* in reference to the more complete or incomplete display of the *pulmonary vesicles*, since he has found, that the first respirations of new-born children are invariably deeper after protracted and difficult than after speedy births. He derives this phenomenon from a more *phlogistic* or *venous* state, to which infantile blood is reduced in the former case, and the deepness of the first respiratory draughts is considered by him as very influential on a due organization of the air-cells and enlargement of the chest ^e).

c. *Function of the skin.*

Between the surface of our body and the surrounding atmosphere there exists a mutual exchange of elementary particles, *oxygen* and other atmospherical fluids being imported by the absorbents of the skin, while *gaseous* — *watery* — *salinous* — *mucous* and *oily* matters, on the contrary, are emitted by the secretory vessels and

sufficient proofs, that a *dark* skin is, in fact, thicker than a *white* skin. At first, when I made every incision equally deep, I had the pain of seeing the vaccination of *Javanese*, *Arabian* and *Moorish* children very frequently fail, whilst, on the contrary, the inoculation of *white* children generally succeeded. When I afterwards adopted the habit of making a deeper incision on the former than on the latter, I obtained a better result.

e) *J. Ch. G. Joerg* Handbuch zum Erkennen und Heilen der Kinderkrankheiten. Leipzig. 1826. §. 83.

glandules of the skin. This function runs on for life, but with more swiftness and energy, where the air is perpetually hot and where the days are of equal length, than it does where the atmosphere is variable and the nights of unequal duration. Physicians leaving Europe for a tropical settlement will perceive this as plain on others as on their own body, but more particularly on children, whose skin perspires less in proportion to midage. They will find, that children within the tropics have a skin continually more lubricous, smeary, humid and even smelling than in Europe, which proves that the cutaneous excretions of mucous, oily, aqueous and gaseous matters are more copious there than here. A proportionable difference will be observed on old people, whose skin, though more wrinkled within the torrid than temperate zone, appears there more covered with perspiratory matter than here.

This climatical difference in cutaneous activity is not without important consequences to the rhythmical process of the internal functions, as from my view of the matter, while in Java, depends upon it:

- 1) a lessened disposition of *infantile* age to *chronic effluxes from the mucous tunics, chronic intumescences of the lymphatic vessels and glands, and chronic protraction of mesenteric atrophy* (vd. Chap. 2. A. et Chap. 5. A.);

- 2) a less disposition on the part of *infantile* and *senile* age to diseases of *the serous tunics, bones, joints, lungs and kidneys* (vd. Chap. 2. B. Chap. 3. Chap. 7. A. et Chap. 9. A.). The less apparent disposition to diseases of the *lungs* in tropical climates, however, is not entirely to be attributed to the increased activity of the skin, but partly to breathing a more expanded air, a point I shall endeavour to explain in the seventh Chapter (A.).

But though we continually observe, that the thermometer is high within the tropics, yet considerable changes of atmospherical warmth occur to those individuals, who stay alternately in the *sun* and *shade*, to which must be added the daily and annual vicissitudes of atmospherical *moisture* and *electricity*. This threefold influence can easily induce a sudden suspension of cutaneous activity, whence I deduce in part the frequency of two classes of diseases observable in hot climates, especially in infancy, viz:

- 1) *intense* acute affections of the *digestive* and *biliary* organs ;
- 2) *superficial* or *slight* acute affections of the *upper aerial passages* : the nasal cavity, pharynx, larynx, trachea et cet. (vd. Chap. A. a. No. 2 et b. 1—4).

If we compare the cutaneous organization and customary habits of *black men* (Negroes, Papoos,

Malay etc.) and *white men* (Europeans et Creoles) residing together in tropical colonies, we perceive that they are distinguished by three circumstances: the former have a thick, spongy skin, go naked and sleep on the ground; the latter have a thinner and denser skin, dress themselves from top to toe and sleep on high bedsteads. Hence I derive four universal modifications of the cutaneous function, though I will not deny, that there are some other causes which contribute to this, as for instance, diversity of blood, food, lodging etc. They are:

1. *A black skin less susceptible of atmospherical vicissitudes.*

The skin of Negroes, Papoos, Malay, Hindoos and other dark-coloured nations of the torrid zone feels always cool and somewhat moist, while the skin of the white population appears extremely variable in respect to warmth, dryness and humidity. The latter are also known to be more liable to *catarrhal* and *rheumatic* distempers than the former.

2. *Perspiration of more gaseous fluid (perspirabile Sanctorianum) through a black skin.*

Two facts seem to prove this: *first*, the specific smell of races, nations and particular families, is more equally spread over the whole surface of *black* bodies, while it is more concentrated at the

armpits and toes of *white* bodies, a difference already perceptible in infancy; *secondly*, black nations (Negroes, Papoos, Javanese, Arabians etc.) can run and work under a burning sun with little or no inconvenience, while Europeans and Creoles can scarcely endure fatigue, the least exertion depriving them of breath. I shall return to this subject, when I come to treat on the *lungs* (Chap. 7. A.).

3. *Excretion of more oily matter (sebum cutaneum) from a black skin.*

The *greasy gloss* always visible on the skin of Negroes, Papoos, Malay etc., and even not quite absent from the skin of Creoles, may tend to prove the above assertion. My clinical observations in the Indies led me to suppose, that this kind of cutaneous excretion was of particular importance to *hepatic* activity, a point more amply to be detailed in my remarks on the *liver* (Chap. 7. B.).

4. *Excretion of more salinous, acidulous and serous particles from a white skin.*

By taste, smell and sight we can every moment convince ourselves of the truth of this assertion, when in tropical countries we compare the excretory matter of *black* and *white* skins. Whether or not a modification of the *rènal* function answers to it, and of what kind it is, I could

not sufficiently find out (vd. Chap. 9. A. The kidneys).

d. *Diseases of the skin.*

Now that I have shown in a physiological respect, what influence a tropical climate has on the skin, I will endeavour to point out, how that influence manifests itself in a pathological point of view, to which end three chief points are to be discussed, viz., *kind of disease, age and race.*

As to the first point, observation has taught:

- 1) Some diseases of the skin are mostly confined to the tropics. Of this number are: higher degrees of *leprosy*; the *raspberry-pox* (*framboesia* sive *lues Indica*), known also by the name of *yaws*, *pians* or *Indian pox*; *furuncles* et *cutaneous abscesses*; the *prickly heat* (*lichen tropicus*).
- 2) Others, which are as frequent within as without the tropics. Such are: the *small pox* (*variolae*); the *modified small pox* (*varioloïdae*); the *chicken-pox* (*varicellae*); the *measles* (*morbilli*); the *red measles* (*rubeolae*); the *nettle-rash* (*urticaria*); the *porcelain fever* (*essera*); the *crysipelas* of adults; the *carbuncle* (*anthrax*); the *shingles* (*zona*); the *tetters* (*herpes*); the *serpiginous scurf* on the face (*crusta serpiginosa*); the *milk-scurf* (*crusta lactea*); the *itch* (*scabies*); the *venereal eruptions*.

- 3) Others, which are less frequent and intense within than without the tropics. To these belong, besides the *chafing* (sore skin) of new-born infants, which has already been mentioned: the *vesicular eruption* (pemphigus); the *scald head* (tinea capitis sive favus); the *erysipelas of new-born children*; the *induration of the cellular membrane* (observed by me in Java but once on a white child); *scrofulous* and *scirrhus induration* of the cutaneous glands; *carcinomatous ulceration* of the skin (only twice seen by me in Java on adult Europeans); *secondary petechiae*; *freckles* (ephelides); *warts* and *corns* (clavi digitorum).
- 4) There are a few, which perhaps are quite unknown within the tropics, at least, they never occurred in my practice. Such are: the true *scarlet-fever* (scarlatina); the *petechial fever* (purpura typhoides); the *Werlhoffian petechianosis* (purpura haemorrhagica); the *red-pimpled face* (gutta rosacea); *common pimples* (vari); *maggots* (comedones).

As to *age*, I am of opinion that children in hot climates are most disposed to *acute* eruptions, and in particular are much less subject to *scrofulous* complaints of the skin, than children in temperate climates. Adults, however, as they advance in age, are more disposed to *chronic* eruptions, especially *impetiginous* and *psoric*, as well as to *habitual ulcers* on the feet.

As to *race*, I found:

- 1) That some diseases of the skin are common to the whole human family without distinction. Of this number are: the *small pox* (variolae); *the modified small pox* (varioloïdae); *the measles* (morbilli); *the itch* (scabies); *the venereal eruptions*. Their appearance, however, is altered more or less by a dark colour of the skin, and are thus less discernible to newly arrived physicians. This observation is very applicable to *measles*, which, by the way, occurred to me frequently on Javanese and Moorish children, but never on a Negro child.
- 2) Some predominate among *white* people, as: *furuncles* and *salutary abscesses of the skin*; others among *black* people, as: the *raspberry-pox* (framboesia); *the white leprosy* (leuke; Jav. belang); *the carbuncle* (anthrax).
- 3) Others, which are seemingly impossible among *black* people, as: *freckles* (never seen even among Creoles); *red measles* (rubeolae); *nettle-rash* and *porcelain-fever* (urticaria et essera); *erysipelas*; *prickly heat*; *purple petechiae*.

e. *Sanative and reproductive power of the skin.*

The *sanative* and *reproductive* power innate in the skin is much increased by a constant warmth of the atmosphere. This assertion is corroborated

by many facts, which daily occur to medical practitioners within the tropics. The principal are:

- 1) The *hair* when cut and *nails* when lost much sooner grow again in hot than in cold climates.
- 2) All sorts of *wounds*, especially those which are got by *cutting*, heal and close up much sooner there than here *f*).
- 3) The *exsiccative* and *exfoliative* stages of acute eruptions are much shorter there than here, as the cuticle lost at that period of the disease is sooner restored.
- 4) Tropical *furuncles*, very common amongst the white population, are always terminable in gentle suppuration and have a threefold salutary tendency: accustoming adult Europeans to the climate, saving little children from visceral inflammation, and frequently completing a favourable turn in inflammatory fevers.

f) The speedy cicatrization of *incised* wounds in hot climates is nevertheless a reason of duly dilating and keeping open such wounds as are caused by *piercing*, lest there should follow any nervous affection. — *Bruises* or *contusions* in hot climates should not be dressed too closely, lest they might turn to mortification.

S e c o n d C h a p t e r .

The internal tunics.

The internal tunics are by anatomists divided into *mucous*, *serous* and *fibrous*. Of these the *mucous* tunics will first claim our attention, because they border upon the epidermis at various points of the external surface of the human body.

A. The mucous tunics.

The inside of the mucous tunics is provided with a multitude of glandules, secreting mucus, a function which is more active in infantile than in adult age, and can be disturbed by several internal, as well as external causes. It is most sensible of the daily and annual vicissitudes of atmospherical light, warmth, moisture and electricity, — agents which not only affect with an immediate impulse the muciparous glandules, but are transmitted to them through the skin. Between the secretory vessels of both there exists a *vicarious* relation, on which account it is, that a deranged function of the one is followed by increased activity or irritability of the other. To get a clearer view of the matter, we will examine (as refers to climate) the morbid phenomena of the organs lined with mucous tunics.

a. *The mucosa of the respiratory organs.*

Thus are called: the internal coat of the nose, larynx, trachea, bronchiae and the pulmonary vesicles, together with the adjoined integuments of the auditory meatus, palate, Eustachian tube and lachrymal passages, as also the conjunctiva of the eyes. This whole membranous apparatus is in perpetual contact with atmospherical air, a circumstance occasionating five series of diseases: 1) *acute inflammations, intense*; 2) *acute inflammations, slight and dry*; 3) *acute inflammations slight and humid* (blennorrhoea acuta); 4) *chronic inflammations dry and humid* (catarrhus chronicus); 5) *polypous excrescences*.

To No. 1. belong: the inflammation of the pulmonary vesicles (*pneumonia*), bronchiae (*bronchitis*), trachea (*tracheitis*) and larynx (*laryngitis*). These affections are much more common to the young than old, and are more favoured by cold than hot climates; their greatest violence occurring in winter, as a cold air by its prevalent elasticity extends the pulmonary vesicles more than a hot and, consequently, increases more the afflux of blood towards the lungs. — I never met with an instance of *croup* (angina membranacea) among children in Java. — The *conjunctiva* of the eyes, chiefly of white children, is, on the contrary, subject to greater degrees of inflammation in hot than in cold climates, a circumstance,

which may be attributed to a more intense irritation caused by the sunbeams.

To *No. 2.* belong: the *first stage* of the common *catarrhal* affections of the eyelids, lachrymal passages, auditory meatus, nasal cavity, palate, throat, larynx, trachea, as well as the bronchial and ocular affections in the *first stages* of *measles*, *scarlet-fever* and *hooping-cough*. All these morbid phenomena, the *scarlet-fever* excepted, are more frequent in the torrid than in the temperate zone, although it is not to be denied, that they are less severe there than here. The frequency of these in hot countries depends in a great measure upon the great evaporation and luxurious vegetation of the ground, whence volatile *miasms* arise, which stimulate the mucous tunics. The atmosphere of the coasts and islands is never quite free from such miasms, but in the interior of tropical continents they arise less frequently and are confined to the rainy season. Along the coasts of the *Sunda-islands*, e. g. *Java*, sporadical *catarrhs* occur throughout the year, and towards the end of the rainy season there annually appears an *epidemical catarrh* (influenza), which spares neither race nor age, but one year it takes a wider range than another, and shows itself under various modifications.

To *No. 3.* belong: besides the *second stage* of the common *catarrhal* affections, the pulmonary catarrh of new-born children (called *asthma*

pituitosum acutissimum infantum of *Wigand*) and the inflammation of the eyelids, incidental to new-born children (*blepharophthalmia neonatorum*). The former I observed but twice in Java, the latter more frequently.

To No. 4. belong: the efflux of rancid mucus from the ears and nose of *scrofulous* children (*otorrhoea et coryza scrophulosa*), besides the *scrofulous photophoby*, *ophthalmy* and *blepharophthalmy*. These diseases are to be considered as productions of an inclement, moist and cold atmosphere, as we do not meet them in countries, where the thermometer of Fahrenheit stands above 70° throughout the year ^g). Whereas among those Europeans, who have been accustomed to the

g) The following fact will prove, that some diseases like plants are indebted for their existance to a certain degree of atmospherical warmth. During my residence of twelve years in Samarang I never saw the thermometer of Fahr. below 70°, nor met a child with a *chronic efflux* from the ears or nose, nor found any wild plant in the immediate environs, which by its shape might have reminded me of any European *genus*. But some miles further up in the country, where a mountain-tract commences, I passed districts (e. g. *Selokaton*), which showed that the thermometer of Fahr. had early in the morning arisen only to 59°. Here I discovered, that some of the vaccinated children were affected with an efflux from the ears and nose, apparently *chronic*, and that some of the indigenous plants were visibly related to European *genera*, e. g. *Artemisia Indica*; *Rubus Javanicus*; *Sisymbrium Indicum*; *Sambucus Javanica*; *Valeriana Javanica*.

tropics, there occurs a complaint, called „the *slimes*“ by the Dutch of Java, consisting in a copious voiding of mucus from the upper part of the trachea by means of expectoration without pain, cough, emaciation or any other illness. This may last for several years without any bad consequences, but if suddenly discontinuing, it will give rise to a greater or less degree of *asthma*.

As to No. 5., the *polypous excrescences*, which in variable climates often originate in the nasal cavity, antrum Highmori, palate etc., not a single instance fell under my observation while in Java.

b. *The mucosa of the digestive organs.*

The mucous integument lining the internal surface of the mouth, gullet, stomach, biliary ducts and intestines is more frequently and intensely affected within the torrid zone, than the mucosa of the respiratory organs. Such is evident by:

- 1) The *cholera* and *yellow fever*, diseases first seen and always sporadical within the tropics, but only at times spreading to higher latitudes.
- 2) The (thus called) *gastric* and *bilious fevers*, *bilious vomiting*, *dysentery*, *catarrhal diarrhoea*, *bilious diarrhoea* and *habitual diarrhoea*, diseases predominant in summer and autumn without the tropics, but always reigning within, preferring whites to blacks and children teething to those of riper age.

- 3) The *tropical thrush* (*aphthae tropicae*), a particular form of lingering inflammation at the mucous integument of the mouth, gullet, stomach etc., prevalent amongst the white population of both the Indies. It must not be confounded with the common thrush of new-born children, a complaint unchanged by climate nor partial to races.
- 4) The fact, that several eruptions, when suppressed either by catching a cold or by applying medicine, generally retire in hot climates to the intestines, whereas in cold climates they commonly tend to the lungs, e. g. *measles* and *itch*. At Samarang I six times observed, that a cold caught at the third or fourth stage of *measles* was followed by purulent diarrhoea, which was soon mortal and symptomatic of *enteritis* according to my anatomical investigation. — At the same place I attended two children, who had fallen into a chronic dysentery by an outward application of medicines, by which *itch* had been suppressed, and who did not recover until the eruption had returned to the skin.

The reason, why the digestive organs are the seat of so many and severe disorders in tropical countries, is owing, on the one hand, to the expansion of air inseparable from a perpetually warm atmosphere and, on the other, to the casual variation of the heat itself. The continual respiration

of expanded air retards the reflux of blood to the chest and causes stagnation of blood in the system of the *vena portarum* (vd. Chap. 7. A. et B.), whence arises an increased irritability of the adjacent integuments of the biliary ducts and intestinal canal, an anomaly more obvious in the whites than blacks, converting, by means of the vicarious relation between the skin and mucous tunics, into actual sickness, as soon as there occurs a casual suspension of the cutaneous function.

The activity of the skin during the day in tropical countries rises to such an extreme as can easily be suspended by a sudden change from a higher to a lower degree of atmospherical heat (vd. Chap. 1. c.). Such changes happen within the atmosphere of tropical countries:

1) When a sea-breeze comes on.

The agreeable coolness, however, spreading at noon on that occasion will hurt no one, except those whose skin has lost its energy from a long obedience to European garbs, or which has just immediately before been overheated.

2) When a landbreeze comes down.

The degree of aerial coolness caused by it depends on the height of the neighbouring mountains.

3) On the approach of night.

The warmth of tropical noon in the shade

and tropical midnight differs but 8 or 16° Fahr. To defend one's skin against such a change, the night-dress must always be proportioned to that of the day.

4) When one retires out of the sun to the shade.

He, who retires to the shade from a shorter or longer continuance in the sun of tropical noon, exposes himself to a decrease of atmospherical warmth equal to 30°, 40° or 50° Fahr. The best preventive against so important a change is in-rubbing the whole surface of the skin with oil (a vulgar usage among Negroes).

5) When a shower comes on.

Such, if happening at tropical noon, will effect a change of atmospherical warmth to him, who walks in the open air, equal to 60° Fahr.

c. The mucosa of the urinary and genital organs.

In what manner the mucous integument of the *urinary* passages (bladder, ureters and urethra) is influenced by tropical heat, I am unable to point out: as morbid phenomena peculiar to these parts, if venereal infection is excepted, occurred too seldom in my Indian practice as to allow of any conclusion based upon the influence of climate. *One* instance of consumption of the bladder

(*phthisis vesicalis*), which befell a mongrel Malay boy, about five years old; *one* of bloody and slimy urine, incident to a mongrel Malay boy of eight years; two of slimy urine together with gravel and stony concretions in the bladder, also incident to mongrel Malay children, are all which my journal contains on the matter in question.

The mucosa of the *genital* organs, at least of foreign subjects, is apparently excited by tropical heat. Females newly arrived from Europe universally show an increased secretion of vaginal mucus (*leucorrhoea tropica*), and the *glans penis* of European males is sometimes covered with lymphatic blotches without a previous venereal infection. The whites common to young scrofulous girls (*leucorrhoea scrophulosa*) seems, on the contrary, to be unknown within the tropics; at least two Creole girls, one five, the other eleven years old, both seemingly affected with such a complaint, had previously been infected by nurses, who laboured under venereal disease.

B. The serous tunics.

They are: the pleura, the internal coat of the pericardium, the peritoneum, arachnoidea and internal coat of the joints. In a healthy state they secrete a serous liquor or rather steam, which is quickly absorbed. By means of this function they stand in the same *vicarious* relation to the skin, as the mucous tunics do, which will appear

more evident, when we compare the diseases of the serous tunics incidental to different climates.

Intense inflammation may be said to thicken or stop the secretion of the serous tunics, in which case they swell up, become joined the one with the other or to adjacent parts and are even destroyed by suppuration. Such organic degenerations are frequently seen at the pleura and pericardium of dead bodies in cold climates (*pleuritis et pericarditis*); whereas in hot countries they occur more frequently at that part of the peritoneum, which covers the surface of the liver, intestines and other digestive organs (*peritonitis*).

A *slight* inflammation or increased determination may be said greatly to raise the secretion of the serous tunics, whence proceeds a family of diseases, called „*hydropical* or *dropsies*.“ These are, no doubt, more frequent in variable and cold countries, annually reduced to the point of congelation, than in those countries continually warm, on account of a greater activity of the skin within the latter. The lingering dropsy of the head (*hydrocephalus chronicus*), the dropsy of the spine (*hydrorrhachitis*) and joints (*hydrops articulorum*) are diseases I never observed in Java, nor did I meet there any striking instance of the inflammatory dropsy of the brain (*hydrocephalus acutus sive febris hydrocephalica*), a common disease among children in Europe. I attended in Java, it is true, a considerable number of white children

affected in their second and third year with fever, somnolency, convulsions, dilatation of the pupils and other symptoms owing to a violent determination of blood towards the brain. Nay, I was even apprehensive in a few cases, that the said affections might turn, or had already turned to lymphatic extravasation into the cerebral ventricles. Yet, none of these little patients happened to die, as a speedy application of leeches, cold affusions on the head and other suitable remedies always sufficed to check the summoned symptoms, the best proof, indeed, of their not being produced by lymphatic extravasation into the brain, commonly mortal as is known.

As to dropsy of the chest (*hydrothorax*), my East-India journal, comprehending the space of twelve years, exhibits but one instance, which occurred to a European fifty years old; as to dropsy of the belly (*ascites*) but four instances came under my observation, and these were upon invalid soldiers of the white race, whereas at Herford in Westphalia I met three instances of the latter disease in one year, an occurrence of some importance to a commencing practitioner as I then was.

C. The fibrous tunics.

Another family of diseases, to be likewise ranked among the consequences of interrupted perspiration, are called *rheumatic*. They have

their seat in the fibrous integuments of the muscles, tendons, bones etc., and are divided into *acute* and *chronic*. As to the latter, their occurrence within the tropics is almost confined to adult Europeans accustomed to the climate and their descendants, a natural penance in my opinion, for going in the day-time dressed in the European fashion and sleeping at night in almost as naked a state as the aboriginal inhabitants. Among *acute* tropical rheumatisms I reckon the *rheumatic tetany*, more common, it seems, to black than white races; as also a *rheumatic palsy* of the lower extremities, known by the vulgar name of „*berri berri*“ in the East-Indies and by that of „*air*“ in the Brazils. Of the latter, which has a lingering tendency, if caught by old people, I met with an epidemical occurrence while in Java.

Third Chapter.

The bones.

Hippocrates the father of medicine says: „that cold does not agree with the bones, teeth, nerves, brain and spinal marrow, but that warmth does“ ^h). The contents of this chapter will show,

^h) *Hippocratis* aphorism. lib. V. a. 18. The original words

in how far that opinion is referable to a climatical influence on the bones at various periods of life.

a. *Formation of bones in the foetus.*

Ossification in the foetus is less anomalous, in my opinion, within a constantly warm than within a variable and cold atmosphere, if we consider, on the one hand, the frequent births of *acephaly*, *hemicephaly*, *encephalocoele*, *hydrocephaly*, *spina bifida*, *wolfs-palates*, *deficient limbs*, *supernumerary limbs*, *deformed limbs* etc. observed by physicians and anatomists in Europe, and collected with such admirable precision by the renowned *I. F. Meckel* in his excellent work on morbid anatomy; on the other hand, the universal silence on those monstrosities by physicians and accoucheurs, who have been long in tropical countries. The few instances, which came under my observation in Dutch India, are these: a Creole girl, weak of mind, whose skull wanted symmetry; a mongrel European boy with a wolfs-palate; two mongrel Europeans with supernumerary fingers and toes; two mongrel Europeans with fingers and toes grown together; a mongrel Chinese girl without a perforation in the fundament; a few Creole

run thus: Τὸ ψυχρὸν πολέμιον ὀστέοισιν, ἄδοῦσι, νεύροις, ἐγκεφάλῳ, νωτιαίῳ μυελῷ. τὸ δὲ θερμὸν ὠφέλιμον.

children club-footed; a Javanese child joined by growth with the rudiment of a twin (described by me in Vol. X. of the *Transactions* published by the *Batavian Society* of arts and sciences). ⁱ⁾

b. *Growth of bones during infancy.*

The tender bones of new-born children thrive better in a constantly warm than in a variable and cold atmosphere. Such is proved, in the first place, by several *physiological* facts, viz., the cutting of milkteeth (*first dentition*) is in general earlier within the tropics; the ability to sit, creep, stand and walk is sooner displayed there; the scull-bones close sooner; the change of milkteeth (*second dentition*) commences and ends sooner; in the second place, by several *pathological* facts, viz., the recession of small pox to bones is unfrequent within the tropics, inflammation of the infantile hip-joint (*coxarthrocace*) is rarely met with and the rickets (*rhachitis*) hardly occur. To corroborate the above, I will add some particularities which I observed in Java.

The better half of new-born children, which I had an opportunity of knowing, got the first

i) It is to be observed here: that only the smaller half of the above monstrosities was born during my stay in Java, viz. the wolfs-palate, club-feet, imperforation of the fundament and coalition of twins, and that none of these, with the exception of the latter, appertained to the black race.

tooth before entering into their *seventh* month, the lesser half, the offspring of white parents, not before their *eighth* or *ninth* month, and some of these exhibited the milk-teeth spoiled, at no great period after they had cut through the gums.

The majority of children I saw born there, could stand and walk within *eleven* months after birth, and the few, who could not, belonged to European parents and had been subject to fever, dysentery and diarrhoea.

Most of the children I knew in Java, had the foremost scull-pit (*fonticulus quadrangulus*) closed by the end of the first year; a few, however, had not until their fifteenth month, but these were likewise the offspring of Europeans and had been weakened by digestive complaints.

The *end* of the *first dentition* or cutting of the four last milk-teeth commonly happened in the earlier, rarely in the latter part of the third year.

The change of milk-teeth or *second dentition* generally commenced in the sixth year, and the *wisdom-teeth* of individuals born there commonly appeared before the eighteenth year.

Of small pox transplaced to bones (*metastasis variolosa*) I knew but one case incident to a young Javanese. I must notify, however, that this nation is wont to plunge repeatedly into cold water the patient when in the first or second stage of small pox, with a view to expel the fevery heat.

It is easily to be conceived, that such a practice, if not paid with life, may repel the disease, even though greatly favoured by climate.

Inflammation of the hipjoint (*coxarthrocace*), formerly called „spontaneous hobbling“, occurred only twice in my Java practice. The patients were Creole children of about two and a half years old, one of them born in the highlands of Java. The particulars of these cases will be reported in the Second Book.

As to the *rickets*, I will not conceal having met with a few children of white descent in Java, impressed with some marks of the *rhachitic habit*, e. g. a protruberant fore-head, dim and pale complexion, muscular laxity of the extremities, concurring with retarded ability to walk. But none of the children born there has shown me a complete image of the disease, manifested by: *morbid* thickening, swelling, softening, decreasing, bending of the arm and thighbones, legs, spine and pelvis, and opening of the moulds of the head when previously closed. On the contrary, I have known five children, two or three years old, come from Europe with such like symptoms, who recovered health without medicines eight or fourteen months from their arrival in Java.

c. *Accidental diseases of bones at mid-age.*

The complaints of bones less depending on native disposition than accidental acquisition at

mid-age comprehend: fracture, caries of teeth, the white intumescence of joints (*tumor albus*), the intumescences of long bones consequent on raspberry-pox (*exostoses framboesiacaë*), the bone-ache consequent on venereal affections (*ostealgia syphilitica*).

Fractures of bones, in my opinion, heal easier and sooner in tropical than in temperate climates, provided we abstain from too close apparel, which might otherwise lead to gangrene (vd. Chap. 1. Note f.).

Caries of teeth and *tooth-ache*, following from it, are not unknown amongst tropical Europeans, but less frequent and intense than in their native country.

The *white intumescence* of the joints (*tumor albus*) I never met with in tropical Europeans; but whether or not there is any relation between this complaint and a tumefaction of the joints, which I have met in some middle-aged black people, and which some have taken for a particular form of *leprosy*, I am unable to decide.

The intumescences of long bones after the departure of *framboesia*, occurring amongst black races in tropical climates, never I found, owe their origin to a cold caught, but always to some suppressive application (e. g. of *blue vitriol* in Java).

The *secondary syphilis*, we know, has a milder character in hot than in cold climates, but

differs in its tendency among white and black people. Among Europeans in Java I knew *four* individuals labouring under an extreme degree of nocturnal *bone-ache*, connected with nodes on the shin, arms and cranium. Three of these patients recovered by means of a *hungry cure*, continued forty days and supported by the use of *red precipitate*, an increased dose of which was ordered to be taken every 48 hours. — Among Javanese, who are fond of subduing a *primary chancre* with blue vitriol and of stopping a *gonorrhoea* with astringents, there everywhere occur many people, deprived of the nose by venereal *ozæna*. But this symptom commonly ends the disease. I knew more than a hundred Javanese, perfectly restored to health after such a loss, without having taken any medicine internally, — thus it would appear, that their disease was terminated by an ulcer on the nose.

d. *Ossification of the cartilages in old age.*

Ossification of cartilages in old age is followed by articular stiffness, coalition of the joints (*ankylosis*) and difficulty of breathing (*asthma senile*). These complaints, according to what I have observed, neither begin so early, nor attain to such an extreme in hot as in temperate climates, owing perhaps to a less disposition to *arthritical* dyscrasy, on account of a more constant and copious perspiration. In my Java practice it

only twice occurred, that people consulted with me for an attack of the true *gout* (*arthritis*); both patients were Europeans and accustomed to the climate. Other writers on tropical diseases speak of gout as a thing of little moment, thus proving that it occurs but seldom in tropical practice. Its place, however, is supplied by another dyscrasy, perfectly equivalent to it, — I mean *leprosy*. But the latter is less pernicious to the joints and, if I am not wrong, less universal in hot, than *gout* is in temperate climates.

F o u r t h C h a p t e r .

The muscles.

To get a clear view of the influence of climate on the contractile power of the muscles, it behoves us to distinguish three gradations of muscular development, as: germinant muscularity of sucklings, florid muscularity of boys and mature muscularity of men.

a. *Germinant muscularity.*

The tender muscular fibres of new-born sucklings bear a strong resemblance to the germs of plants. As the latter grow quicker, so the former increase sooner in strength in a constantly

warm than in a variable and cold atmosphere, an opinion worthy of credit *a priori*, if we consider that the said influence favours also the formation of bones, on which the display of muscles is partly dependent, frees little children from the use of constraining clothes and allows them to abide continually in the open air, a privilege, which greatly facilitates the motion of the limbs and the exertion of tender muscles not yet subdued to the will.

But I can also appeal to facts, which prove that the above opinion is true. They are, *first*, in respect to *physiology*: the great quickness displayed by tropical sucklings in turning from back to belly, a few days after birth; their early keeping the head in an erect position; their speedy progress in creeping and walking; *secondly*, in respect to *pathology*: the easier restitution of infantile *clubfeet* and rareness of *St. Vitus' dance* in tropical climates. Of the latter disease I knew but one instance in Java, namely, a Creole boy eight years old, guilty of onania.

b. *Florid muscularity.*

The flexible muscular fibres of boys, nearly at full age, are to be compared to the shoots of plants about to blow. Their growth is too soon finished within a constantly warm atmosphere and, of course, they cannot attain to such a degree of contractibility, as if alternately influenced by cold

and warmth. That this is no idle supposition, appears as well from history as modern experience. The ancient *Scythians*, *Germans* and other nations of northern Europe and Asia kept the minds of the southern nations in continual fear, by virtue of their great stature and muscular superiority, as long as they lived in a state of nature. And even now there are among the country-people of middle Europe (e. g. *England*, *Switzerland*) individuals preeminent in strength, who can lift up heavier weights and bear longer fatigues within their native climate, than even the *Negroes* can, who are said to surpass all other races of the torrid zone in muscularity, a prerogative perhaps due to the greater dryness of the African climate.

c. *Mature muscularity.*

The matured muscular fibres of fullgrown men are in some respect to be compared with ripe fruits. As the latter putrify sooner, so the former languish by means of the permanent heat. Facts proving this are:

- 1) The *universal laziness* of tropical natives when scarcely entering into midage, a well-known characteristic every where.
- 2) The *speedy decrease* in the muscular power of adult Europeans settled within the tropics, likewise a well-known fact.
- 3) The early trembling of the hands (*tremor*

manuum tropicus) of adult Europeans, who have lived several years in tropical countries, an incidence which happened to many of my acquaintance in Java, who were neither drunkards nor of nervous constitution.

- 4) A tendency of *groin-ruptures* to grow worse within the tropics, in case people come from Europe with this complaint, as I have several times observed in Java.
- 5) A particular disposition of women in tropical countries, chiefly European who lay-in several times, to *prolapsus of the womb* (*hysterocele*), a complaint which I very frequently observed in Java, though I will not deny, that the rude manners of the native midwives greatly contributed to it.
- 6) An apparent disposition of the joints to *re-lapse into luxation*, after this complaint has once taken place in hot climates, as I observed in more than one subject in Java, native as well as European.

F i f t h C h a p t e r.

The vessels.

The vessels of the human frame are divided into two chief classes: *lymphatic* and *bloodvessels*.

A. The lymphatics.

Absorption and *secretion* is the double function of the lymphatic system. Its due performance may be considered as the basis of health during the earlier months of infancy, as the *heart* and *lungs*, which may be considered as the main springs of a self-dependent circulation of blood, are yet very imperfect at that period of life. It happens very easily, however, that by breathing a foul air, catching a cold or taking bad food, the due equilibrium between infantile absorption and secretion is broken, in which case the lymphatic vessels, glands and annexes become liable to: *morbid stagnation, accumulation, tumefaction, emollition, decomposition* and *excretion*, a pathological state, known by the name of *scrofula* (king's evil). To show, how much the influence of climate contributes to it, I will review its vulgar gradations and modifications, touching by the way on those, which may or may not occur within the tropics. They are as follows.

1. The *scrofulous habit*, a concurrence of marks in respect to infantile shape and complexion, betraying a particular predisposition to *scrofula*, and including: a delicate frame; a white and fine skin, the face gently tinged with red; an intelligent and animated countenance; blue eyes; light hair; a blubbered upper lip; short, thick neck; unproportionate and big

head; broad jaws; tumid belly; slack muscles etc. — Children of *white* descent impressed with such like marks are sometimes to be met within hot countries, but I never saw a black child thoroughly possessed of these characteristics, nor do I think that such is to be found.

2. A particular disposition to *intestinal acescency, flatulency, obstruction with slime and production of worms*. — This morbid disposition of tender infancy is just as observable in hot as in temperate climates, a general consequence, no doubt, of improper nursing, a circumstance which happens to sucklings in all parts of the world. Yet, *white* sucklings are more predisposed in my opinion to *intestinal acescency* than dark-coloured.
3. *Mesenteric atrophy*. — This form of infantile sickness is also common to hot and temperate climates, but has a more *acute* and *inflammatory* tendency there than here. Its usual cause is owing to an improper nutrition and premature weaning.
4. *Scrofulous eruptions*, especially *scald head (tinea or favus)*. — The latter complaint is not so common and much less obstinate in the hot than in the temperate zone (vd. Chap. 1. d.).
5. *Scrofulous effluxes*, especially from the ears, nose and vagina (*blennorrhoea scrophulosa*).

— Of these complaints I never met an instance among children at Samarang (vd. Chap. 2. A. a. No. 4.).

6. *Chronic tumefaction and induration of the jugular; axillary and inguinal glands.* — I only knew a few Creole children in Java slightly marked with this symptom, but not a single child of the black race.
7. *Scrofulous ulcers.* — This complaint seems to be quite unknown within the tropics, as I never observed a form of ulcer in Java, to which I could compare it. At least the *furuncles* and *ulcered boils* incidental to white children in hot countries never appeared to have a tendency to chronic and malign supuration, and the ulcers symptomatic of *framboesia*, though more like *scrofulous* in lingering protraction, are discernible at first view.
8. *Scrofulous intumescences of bones and joints (e. g. paedarthrocace).* — These diseased forms have already been mentioned in the third chapter as uncommon within the torrid zone.

Thus I think that I have evinced, that a constantly warm atmosphere is less injurious to the function of infantile lymphatics than a variable and cold atmosphere.

B. Blood-vessels.

If we look at the phenomena of an egg hatched in an oven, we may naturally conclude, that a permanently hot atmosphere has an exciting influence on infantile blood and blood-vessels, and thus that infantile life within the tropics is most subject to such morbid anomalies as depend on an excited or enhanced activity of the sanguiferous system. Observation teaches in a convincing manner, that this remark is true.

The total number of infantile patients, which I attended in Java, i. e. patients from *one* to *fifteen* years old, whether affected indifferently with a real disease or pure uneasiness or local complaints, was about 1600, which number contained 550 *acute fevers* (exclusive of *ague*) and 106 *active hemorrhages*. Of the 550 young patients in *acute fever* 19 were under *six* months, 211 between *six* months and *four* years, 320 between *four* and fifteen years old. Of the 106 little patients in *active hemorrhage* 12 were under *six* months, 43 between *six* months and *four* years, 51 between *four* and *fifteen* years of age.

Thus the frequency of the said diseases prevailed about the cutting of the milkteeth, a circumstance which indicates a preponderance of *vascular irritability* at that period of infantile life in tropical climates.

In anatomy the system of blood-vessels is

divided into three parts, either of which forms a system in itself, to wit: *first*, the vessels of the *larger circuit*, comprehending the ramifications of the *aorta* and corresponding veins; *secondly*, the vessels of the *smaller circuit*, comprehending the ramifications of the *pulmonary artery* and corresponding veins; *thirdly*, the *vena portarum*, uniting all the venal branches of the chylopoetic organs. Hence there arises the question, what part of the sanguiferous system is most susceptible of atmospherical heat? This will appear in some measure from the following account.

Of the 550 *acute fevers* above mentioned: 279 happened to be *gastric*, i. e. attended with symptoms of increased irritability or actual inflammation in the chylopoetic organs (stomach, intestines, liver, biliary ducts, salivary glands and spleen); 123 *catarrhal*, i. e., attended with a slight inflammation of the conjunctiva, lachrymal passages, nasal cavity, auditory canal, pharynx, larynx, trachea, bronchiae (the affection in general continuing but some days and very seldom extending, as it seemed, to the pulmonary vesicles (vd. Chap. 2. A. a. No. 1.)); 107 *eruptive*, i. e., attended with an inflammatory eruption of the skin (exclusively of cow-pox); 41 *cephalic*, i. e., attended with increased irritability or inflammatory affection of the brain. — Of the 106 *active hemorrhages*: 86 consisted in *bloody flux* from the anus (dysentery, bloody diarrhoea, piles); 9 in

bleeding at the navel a while after birth; 4 in *vomiting blood*; 3 in *bleeding from the nose*; 2 in *spitting blood*; 2 in *bloody urine*.

The above statement seems to prove, that the exciting influence of atmospherical heat is mostly directed: first, to the centre of union between the *vena portarum* and the system of the *larger circuit*; secondly, to the vascular extremities of the *bodily surface*. The latter impression is evident, when we consider that there is an immediate contact between the vascular extremities of the skin and its mucous annexes, on the one hand, and the luminary beams of the atmosphere, on the other. But, how it comes, that the radical and final branches of the *vena portarum*, hidden in the midst of the abdomen, can be stirred to a higher activity, is less evident and will be more amply discussed in my remarks on the *lungs* and *liver* (Chap. 7. A. and B.).

As to the rest, we should not forget, that vascular activity is obedient to the same law as muscular contractibility, i. e., rising to a certain degree in the prime of youth and remaining for a time in that state, but then declining. Its rising we have seen is advanced by atmospherical heat. Accordingly we may suppose, that its decline dates from an earlier period in hot than in cold climates. At least so it appeared to me in tropical India, where I convinced myself, that children of *white* parents lose greatly, and children

of *black* parents entirely, their excessive disposition to *visceral inflammation* and *active hemorrhage*, as soon as they have finished their first dentition or entered into their fourth year. — A similar rising and sinking of vascular activity is obvious in adult Europeans emigrating to hot climates, who in the first years after their arrival are mostly disposed to *acute* fevers, but afterwards more to *chronic* diseases. ^{k)}

The declining period of vascular activity in tropical climates is accompanied with a great many appearances, which prove that the return of blood from the lower extremities towards the heart is disproportionally difficult. They are:

- 1) The general habit of black natives to sit down on the ground with *crossed legs*, oddly agreeing with the favourite custom of seasoned Europeans to support their legs with a *table* or *second chair*, while sitting.
- 2) The frequency of *swollen feet* (*oedema pedum*). — This intumescency appears already in infancy as a common symptom in the second stage of acute diseases, but it occurs still oftener on adult patients with periodical deterioration towards the new or full moon.
- 3) The frequency and obstinacy of *ulcerated feet*

^{k)} Vd. *My levensregelen voor Europeanen in heete gewesten* etc. Amsterdam. 1829. §. 20.

(*ulcera pedum*) among fullgrown people of every race.

- 4) The early beginning of *hemorrhoidal* distempers among the white population, and the frequency of local complaints arising from or dependent on it, as: hemorrhoidal costiveness; hemorrhoidal diarrhoea; hemorrhoidal dysury; hemorrhoidal protuberances and intumescences at the anus (blind piles); dilated veins (*varices*) along the thighs and legs; periodic inflammation of the rectum (*proctitis*); fistula of the anus; anticipation of the monthly courses etc.

S i x t h C h a p t e r.

The nerves.

Climatical agents, which are said more particularly to influence the nervous system, are: the daylight, attraction of celestial bodies, atmospherical electricity and the change of seasons. The *rotatory motion* of the globe is still, in my opinion, to be ranged among them.

The quickening influence of the *daylight* is by the *optic nerve* straight way led to the *brain*, and by the nerves of the skin towards the *spinal marrow* and *ganglia*. — As the tropical daylight

is clearer and returns more regularly than in higher latitudes, we may expect that the organs now mentioned will much sooner and more distinctly react upon it. This conjecture is not disapproved by my clinical observations on tender age in Java. For, little children in their first year, I found, were easily struck into violent *convulsions*, which often terminated fatally within a few hours. The results of my treatment and a few anatomical dissections ^{l)} led me to believe, that this incident was dependent on a volatile irritation or inflammation of the brain. Of 31 babes seized with such convulsions 26 had not passed their seventh month.

The disposition to *chronic convulsions* at more advanced childhood and at adult age seems, on the contrary, to be more favoured by cold than hot climates. In Java I met with but one instance of *St. Vitus' dance* in a boy eight years old, already mentioned in the chapter on muscles, and only two cases of *epilepsy* in patients, who had almost attained full age. It deserves to be noticed, however, that I met with several youths in Java, who had arrived from Europe with epilepsy, and whose fits increased in frequency and vehemence, from the period of their arrival.

The *attractive power* of celestial bodies, viz.,

^{l)} Physicians in Java are but seldom permitted to open dead bodies, a circumstance, which has frequently grieved me.

of the *sun*, *moon* and *planets* is, we know, stronger towards the equator than poles, owing to a more perpendicular direction. This circumstance is said to have a particular influence on the *sympathetic nerve*, as physicians have observed *tropical agues* to return with renewed force at full and new moon, sun- and moon-eclipses and planetary transits.^{m)} — My clinical journal shows, that even tender infancy is not exempt from that form of sickness. Of 73 children, which I there attended for ague, 11 were between *six* and *twelve* months, 10 between *one* and *four* years, 52 between *four* and *fifteen* years old.

How the nervous system is influenced by the *rotatory motion* of our globe, which is much swifter, of course, towards the equator than poles, has not yet been treated by any author. Is not its influence nearly the same as that of a fast sailing ship? At least one is apt to think so, when he draws a comparison between the *sea-sickness*, that common complaint of novices at sea, and *bilious diseases* so frequent among newborn children and Europeans lately arrived in tropical countries.

Atmospherical electricity first affects the nerves of the skin, and enhances in my opinion the excitation of atmospherical heat. For, at that period of the day, when a tropical atmosphere is

^{m)} *Balfour* on sol-lunar influence in fevers. London. 1795.

hottest and most dry, to wit about noon, its electric tenseness seems to be at its height, and makes a most oppressive and tiresome impression on the nerves, as appears from the unconquerable desire of all living creatures to sleep at noon, from the beggar on the street to the tiger in the forest.

Lastly the *change of seasons* multiplies and modifies the necessities of men, a circumstance of incalculable consequences to the display of inclinations, passions and other mental faculties. Indeed, when we consider this, we cannot be astonished at seeing tropical nations so little excel in *assiduity, industry* and *inquisitiveness*. Nature has presented them with an eternal summer, which causes them to be less anxious about their future subsistence. But when we come to look deeper into their character, it seems strange that we should meet with two contrasting extremes almost universal, as : *phlegmatic indolence* opposed to *unbridled passion* ; *candid heartiness* to *fraudulent malice* ; *oblivious imbecility* to *implacable vindictiveness* ; and *stupid apathy* to *blind and headlong rage*.

Moreover, I could not see, that a continual summer manifests an unfavourable influence in displaying mental faculties, before the *seventh* or *eighth* year. Until that period of life I could perceive very little difference between children in Europe and those in tropical countries, as regards

the usual progress in speaking, singing, reading, writing, ciphering etc. Nay, it even appeared to me, that the latter up to the period now mentioned surpass in some respects the former, e. g. in early displaying a *musical ear* and *quick imagination*. From the eighth year, however, they generally become lazy, sluggish and eager in the pursuit of pleasures, a tendency which is daily more and more favoured by the influence of bad examples, extinguishing the desire of learning and at last inspiring them with an unconquerable aversion for mental exertion. Such is the reason, that the children of Europeans in the East- and West-Indies so often attain the period of manhood, without the requisite learning to fit them for the common intercourses of life.

S e v e n t h C h a p t e r .

The lungs and liver.

A. The lungs.

The *lungs* are destined to breathe atmospherical air from the moment of birth, by this means to clear the blood of *phlogiston* and to promote the circulation by alternately dilating and contracting the chest while respiring. The question

then is thus: can this function of the lungs be as well performed within a hot, as a cold atmosphere? My reply is, that it cannot and for two reasons. First, the air which is expanded by heat, is less elastic than cold air, and thus less fit to distend the *pulmonary vesicles* and dilate the chest by its entrance. Secondly, the more atmospherical air is expanded by heat, the more its *oxygen* is rarified, and its influence of course less in clearing the blood carried by the final branches of the *pulmonary artery*. In one word, the pulmonary capacity remains smaller and the *pulmonary dephlogistication* of blood is much slower from continually respiring a hot air. Such, in my opinion, leads to the following important modifications of human temperament.

1. *Lessened determination of blood towards the chest.*

As soon as a child breathes, the blood, as we are aware, turns from the *umbilical region* and *vena portarum*, and flows with an increased impulse towards the heart. Hence it follows that, the more each respiration distends the *pulmonary vesicles*, the more it promotes the entrance of blood into the *pulmonary artery*, and the more it increases the afflux of blood from the *hollow veins* to the *right ventricle* of the heart. Inverting this theme, we are led to presume, that such kinds of sickness as have their origin from a too

impetuous determination of blood to the *heart* and *lungs*, will be less frequent and less intense within a hot than within a cold climate. Observation favours this presumption:

- a) As to the *blue disease (cyanosis)*, a vulgar incident to new-born children in Europe, resulting from obviated obliteration of the *foramen ovale*, *ductus arteriosus Botalli* and other organic anomalies of the heart. This disease, if indeed it occurs within the tropics, seems to be curable by nature, a circumstance which never occurs in Europe. At least the suffocating fits incidental to some new-born fair children, whom I knew in Java, and to be described in the Second Book under the name of „*periodic pulmonary spasm*“, generally ceased spontaneously at the second or third year of life, in spite of their resemblance to the *blue disease*. Though I am now of opinion, that they depended on an incomplete or tarrying obliteration of the *foetal apertures*, yet it cannot be denied, that nature supported by climatical warmth can subdue such an obstacle. ⁿ⁾)

ⁿ⁾ *Ch. Billard* (in his *Traité de maladies des enfans nouveaux* etc. Paris, 1828; art. *oblitération des ouvertures du fœtus*) has published interesting observations on the occlusive period of the *foetal apertures*. According to his statement the *foramen ovale* and *ductus arteriosus* are commonly shut the eighth or tenth day after birth, the

- b) As regards *hypertrophy of the heart, ossification of the valves and dilatation of the large arteries* (*aneurisma aortae, arteriae pulmonalis* etc.). — This species of morbid phenomena has been passed in silence by all authors on tropical diseases, nor have I ever discovered it in Dutch India.
- c) As to *pulmonary inflammation (pneumonia), spitting of blood (haemoptysis), pulmonary apoplexy, suppuration and tubercular degeneration of the lungs* (*phthisis pulmonalis exulcerata et tuberculosa*). — These diseases, though not impossible within the tropics, are nevertheless much less frequent than in variable and cold climates, as has already been mentioned in former chapters and been conceded by many writers.

2. *Lessened sanguification and warmth of blood.*

It is the general opinion of physiologists, that the lungs are a chief support of *sanguification* and a chief source of *animal warmth*. Suppose we grant, that the function of this organ is retarded by a continually hot atmosphere, a pro-

umbilical vessels and ductus venosus a few days before. — We should be well pleased to think, that physicians in tropical countries slipped not any occasion of opening the bodies of new-born children, who have died, in order to find out, whether or not the shutting up of the *foetal apertures* is retarded by tropical heat.

portionate decrease of blood and blood-warmth must be the consequence. That such is actually the case, will appear by comparing the constitution of Europeans and natives in tropical countries. Traces of an actual or spurious *plethora* are always visible in the former, when newly arrived, such as: a large or full pulse, carotids intensely beating, veins most turgid, a skin always burning, relief felt after a copious venesection. These traces gradually disappear after a more lengthened sojourn in tropical countries: the pulse annually becomes smaller, the carotids beating less intensely, the veins are less turgid, the skin is less burning and copious venesection gives less relief. Small or no traces of *plethora* are discovered on the latter: their pulse is naturally small and soft, their carotids calm, their veins very little swollen, their skin cool and their strength is almost wholly exhausted by a copious venesection.

3. *Substantial modification of blood.*

Human blood, it would appear, is more impregnated with *atrabilarious* principle in hot than in cold climates. The proofs are, first, the general character of tropical diseases; secondly, the facts which have been observed by myself and others, that the blood, which has been drawn from coloured natives and Europeans accustomed to the climate, appears *less florid* and *congealable*, than the blood of newly arrived Europeans. When

I had occasion to bleed any of the young Javanese, I found that their blood quickly flowed from the vein, but when exposed to the air, it became congealed into a small soft cake, which soon dissolved again from a disproportionate superfluity of yellow serum. On the other hand, when I bled elder Javanese in their fortieth or fiftieth year, I found that their blood flowed slowly from the vein and, in a few hours afterwards, had a murrey poultice-appearance, serum being unseparated.

4. Accumulation of blood in the umbilical region and vena portarum.

If respiration of a hot atmosphere is connected with a lessened flow of blood to the right ventricle of the heart and pulmonary artery, as has been demonstrated in No. 1., it must be followed by accumulation of blood in the *umbilical region* and *vena portarum*, in one word, by *abdominal plethora*. That this happens we are taught:

- a) By the phenomena of *native asphyxia*, which does not suspend the umbilical pulsation, until the new-born patient duly respire or has actually died.
- b). By the long continuance of the *umbilical pulsation* of white children born in hot countries, a matter more amply to be discussed in the Second Part.
- c) By the *bloody exsudation from the navel*,

incidental a few months after birth to several white sucklings, which came under my observation in Java and which shall be detailed in the Second Book.

- d) By the frequent occurrence of *abdominal inflammation* and *bloody excretion from the anus* in all hot climates, especially among white infants and lately arrived Europeans.

5. *Augmented secretion of bile or increased hepatic dephlogistication of blood in white bodies.*

This matter necessitates me to divide the present Chapter (vd. B.), as soon as I have mentioned a climatical incidence to respiration, which other physicians in tropical colonies may have observed before me, without perhaps paying to it that deserved attention, which its importance demands. — It is as follows.

No *white* man can bear any bodily exertion in the tropical sun without, in a few minutes, being out of breath and falling into a state of lassitude, nearly to fainting; whereas *dark-coloured* people (Negroes, Papoos, Javanese etc.) can for hours together run in the tropical sun, and carry with them a heavy burden, that too without feeling the least oppression of breath. How comes this? In my opinion it depends on a difference of *blood, diet* and organization of the *skin*. *White* men are naturally more plethoric, take more

stimulating food, wear thicker clothes and have a much thinner skin, than *black* men. Such may be one reason, why they are the more excited by atmospherical heat. Black men, moreover, have a looser cutaneous tissue, whence I deduce a more constant and more copious perspiration of aerial phlogiston (*cutaneous dephlogistication*), and which, of course, must be followed by a greater coolness in the blood and easiness of respiration within a hot atmosphere (vd. Chap. 1. c. 1.). To confirm the above I will tell here a small adventure, which happened to myself in the district of *Oenarang* in Java, while on a journey to inspect the cowpox.

One afternoon I set out with some Javanese and ascended the mountain, after which that district is named. The thermometer of Fahr. stood at 122° in the sun. On the way I soon got out of breath (though I have a very good chest) and was consequently obliged to rest from time to time, while my brown guides though burdened with my baggage continued their way to the foot of the mountain without in the least being pressed for breath. On the following day we departed about four o' clock in the morning, the thermometer of Fahr. standing at 60°. As soon as we had ascended some two thousand feet, the Javanese the one after the other began to pant, while my respiration continued free and easy. — To explain this accident I know of no better

reason, than to admit a superior capacity of the pulmonary vesicles on my part, and a preponderant porosity of the cutaneous tissue on the part of the Javanese. The former attribute, I think, agrees better with a cold atmosphere, because it favours the production of vital warmth, whereas the latter with a hot atmosphere, because it tempers the warmth of the blood.

B. The liver.

„*Ubi irritatio ibi affluxus, et vice versa, ubi affluxus ibi irritatio.*“ This sentence, referred to what has been said at No. 4 of my remarks on the lungs, explains in a plain and easy manner the phenomena of increased activity of the liver during the earlier period not only after birth within hot, but also after emigration from cold to hot climates.

Of all organs of the foetus it is only the *liver*, which separates phlogiston; for, the *lungs* and *skin* considered as *dephlogisticating* organs are quite inactive before birth. — The phlogistic principle separated by the liver tinges the foetal bile with a pitchy or dark green colour, which may have occasioned the expression „*meconium.*“ The source of this dark bile is the blood of the *vena portarum*, which flows more abundantly towards an unborn than born liver, whereas the *pulmonary arteries* transmit no blood before respiration commences. This circumstance accounts at once for

the disproportionate largeness characterizing an unborn liver from unborn lungs and other organs.

The first breath, which a child takes on being born, imparts another course to its circulation, as has already been mentioned. From that moment the liver receives less blood, which gradually lessens its bulky and disproportionate appearance, and the bile becomes of a lighter colour. I could perceive, however, that the offspring of *white* parents within the tropics differed very much in this respect from the offspring of *black* parents, i. e., the former retained for a longer period the native disproportion of the hepatic volume, were less prompt in voiding the foetal *meconium* and continued longer subject to *green diarrhoea*, than the latter did. I should say, that this particular disposition of the former is not lost, until the *native redness* of their skin has changed for tropical *yellow* or *pale*, or which is the same thing, until their skin has attained a greater thickness, looseness and insusceptibility of atmospherical influences (vd. Chap. 1. a. b. c.).

Similar phenomena are observed on adult Europeans settling in tropical climates. Their complexion is flushed and glowing from the moment of their arrival, their skin becomes covered with the (thus called) *prickly heat* a few days later, and the colour of their evacuations is at once tinged with black or darkgreen, a harbinger of various kinds of bilious diseases, hepatic and

splenic derangements, as: *bilious diarrhoea; dysentery; hepatic and splenic hypertrophy, inflammation, induration, degeneration and suppuration (phthisis hepatica)*. But, the more they change their characteristic blush, the more decreases their disposition to bilious and hepatic distemper. This criterion, indeed, seems to be pretty infallible in judging, whether or not a European is well-accustomed to climate. In Java, at least, I found that those Europeans, who became *pale*, always enjoyed better health than those, who had a flushed face, and after death I never perceived such a visible derangement of the chylopoetic system in the former as in the latter.

Notwithstanding, to be *white-skinned* within the torrid zone, in defiance of being well-accustomed to the climate, is attended during life with a certain degree of *hepatic irritability*, manifesting itself partly by an anomalous secretion, partly by an uncommon darkness and acerbity of bile. Accordingly the stools of the *white* inhabitants, though in health, always exhibit a mixed green and dark appearance, whereas the stools of black natives, when in health, have the same light brown colour as those of Europeans in their native country. This distinction is so characteristic, that it enables us to decide nearly with the same certainty, where a white and where a black subject have eased themselves, as a skilful hunter knows, how to distinguish animals, from their excrements. —

I beg to refer this observation to what I have said in the first chapter (c. 3.) on the difference, which exists between the *white* and *black* races, as regards *oily* excretion from the skin.

E i g h t h C h a p t e r .

The teeth, salivary glands and intestinal canal.

1. The teeth.

It has already been mentioned in the chapter „on bones“, that the cutting of *twenty* milk-teeth, and in like manner their change for permanent teeth, generally commences earlier in hot than in temperate climates. Here I will add only a few words on the successive order commonly observed by nature in protruding the milk-teeth, as it may serve for a rule in exactly determining the regimen for little children about to be weaned.

The *two middle incisors* of the *under* jaw commonly first cut, in Europe between the seventh and eighth, in Java between the sixth and seventh month; next to these the *two middle incisors* of the *upper* jaw; after-wards the *two exterior incisors* of the *under* jaw; and then the *two exterior incisors* of the *upper* jaw. These eight incisors

mostly appear about the end of the first year. With the entrance into the second year children generally have the *four foremost cheek-teeth* (bicuspides); a few months after (sometimes before) the *four eye-teeth*; and near the end of the second or beginning of third year the *four hinder cheek-teeth*, which conclude the period of the first dentition.

2. *The salivary glands.*

A little while before the first milk-tooth appears in the mouth, children begin to salivate, which indicates that their salivary glands (*parotid, maxillary* and *sublingual* glands) have attained to a higher degree of perfection. Such may be said to happen earlier by one or two months in hot than in cold countries. In my Indian practice I liked to see little babes have a copious excretion of saliva, as it seemed not only to facilitate the cutting of the first milk-teeth, but also to lessen the predisposition to *thrush*. — The *pancreatic* gland probably begins its function at the same time with those situated near the mouth, as it most agrees with them in organization and function. — It deserves to be mentioned, that the period from the *third* to the *sixth* year of life within the torrid zone seems to be favourable to inflammation of the salivary glands, and that such an affection does not always end without danger to life, a matter I will return to in the second Book.

3. *The stomach.*

The function of the stomach is to convert aliments into *chyme*, after they have been chewed and mingled with saliva. To this end nature has endowed it with a threefold power, as: a high degree of *vital warmth*; a soapy dissolvent humour, called the *gastric juice*, which is separated by the mucous coat; and *peristaltic motion*, dependent on the innate contractibility of the muscular tunic.

Infantile stomachs are probably warmer in hot than in cold climates, if we consider, that the excitative influence of atmospherical heat is mostly directed to the centre of union between the vena portarum and vessels of the larger circuit (vd. Chap. 5. B.). The warmth of *adult* stomachs, on the contrary, appears more intense in cold climates, for to digest lard of seals and oil of whales in such a quantity, as the polar nations can, would be a hard task for tropical natives.

The secretion of the *gastric juice*, it seems, inclines more to anomalous deviation in hot than in cold climates, as accords with what has been remarked in the second chapter (A. b.) on the increased irritability caused by atmospherical heat in the mucous integuments of the intestines and biliary ducts.

As to *stomachic muscularity*, there is no doubt, that its display in infancy is less obviated

within the hot than temperate zones, if we consider, on the one hand, the wholesome influence of warmth on infantile muscular fibres in general, and on the other hand the superfluity of constraining clothes, used in cold countries to wrap up the belly of new-born little ones. Whereas the muscular power of adult stomachs slackens earlier within a hot atmosphere, as is evident from the universal use of hot-spiced food among tropical nations.

4. *The small intestines.*

Two facts led me to believe, that atmospherical warmth favours the absorption of *chyle* from the small intestines: first, the *speedy growth* of tropical children in comparison with those born in the temperate and cold zones; secondly, the swifter course of *mesenteric atrophy* incidental to the former. Not any of the instances I met with in Java of this disease, had originated, as it appeared, with primitive torpidness of the *lacteals*, but always with a tendency to inflammation.

5. *The large intestines.*

Bile is to the lower part of the intestines what atmospherical air is to the lungs, that is to say, an incitement of enhanced activity (*peristaltic motion*) to carry downwards, what is no longer of use to the animal economy. — Little children have much greater need of daily stools than adult

persons, as of the food taken by them there is proportionally less digested, assimilated, perspired and perhaps also carried off by respiration. We must deem it therefore a suitable measure of nature, that the discharge of the infantile intestines is promoted by a copious secretion of bile. — The same rule is equally applicable to *white* subjects in hot climates. They have more need of regular daily stools than *dark-coloured* subjects, as the abdominal plethora consequent on retarded *pulmonary dephlogistication* (vd. Chap. 7. A. 4.) in white bodies is less compensated for by an increased *cutaneous dephlogistication*, than in black frames (vd. Chap. 1. c. 2. 3.). The following sketch will give an idea to mothers and lately arrived physicians, of what may be considered as a rule concerning the number and quality of the daily evacuations of children within the tropics.

In the evacuative period of *foetal meconium*, lasting in general *three* days from the moment of birth with children of *black* parents, *four* days with those of *white* parents, the number of daily stools should not exceed *six* nor be less than *three*; if deviating, it is to be deemed more or less morbid. In colour and consistence stools during that period resemble molten pitch.

From the *third* and *fourth day* after birth till about the *fourth* and *sixth month* stools are of a gold colour, yet frequently green with children of *white* parents; in consistence comparable

to the raw yolk of an egg, but less uniform in mixture, and in number differing between *six* and *three* a day. This rule refers solely to such children, as are nourished with suck during the period in question. Sucklings, who begin to eat within the hot zone before attaining the fourth month, fall into two digestive anomalies: either into *costiveness*, i. e. having too rare, too thick, too scanty and too light-coloured stools; or into *looseness* of the belly, i. e. catching a periodical diarrhoea with copious voiding of green bile. The former anomaly increases the infantile predisposition to *gastritis*, *enteritis*, *hepatitis* and *encephalitis*, and is thus more to be dreaded in children of white than black parents.

During the cutting of milk-teeth, i. e., from the *sixth month* to the *third year* of life, the number of daily stools is reduced from *five* to *three* with children of *white* descent, from *four* to *two* with those of *black* descent; the consistence of evacuations continuing soft; the colour by and by passing to light-brown. Yet *white* children generally continue to void from time to time much green bile, but are better so, than if costive, as bilious excretion lessens their disposition to *cerebral*, *hepatic* and *intestinal* inflammations.

From the cutting of the *twenty* milk-teeth the daily stools of *white* children are reduced from *three* to *two*, of *black* children often already

to *one* ; faecal colour and consistence approaching more and more to the appearance of full age.

At *midage*, it seems, that the large intestines sink to a greater degree of torpidity in hot than in temperate climates, especially of females, who have frequently been brought to bed. I knew many such females in Java, who had but one stool a week, in spite of a very strong appetite, and retained their health for years, if belonging to a coloured or mongrel race.

N i n t h C h a p t e r .

The kidneys, bladder and genitals.

I put these three organs in one chapter, because my notices of climatical influence on their development are expressed in a few words.

A. The kidneys and bladder.

Between the *kidnies* and *skin* we observe an opposite climatical relation to that, which exists between the *liver* and *lungs*, i. e., the more atmospherical temperature rises, the more *renal* activity decreases, such being in consequence of an increased ejection or excretion of elementary particles from the skin.

The *first* year of life is less adapted to

demonstrate this. — The 192 children I saw brought to light in Samarang, first made urine within *six* hours after birth, two excepted, who did not do so, until *twenty four* hours had elapsed, and the daily number of urinous evacuations during the period of lactation generally ranged from *ten* to *six*. Comparing such with what is observed in Europe, we cannot but think, that during the first year of life there is little or no difference of *renal* activity in hot and temperate climates. But from the second year upwards facts sufficient can be cited in order to prove, that this function is less active there than here. To which I reckon:

1. *Involuntary excretion of urine in sleep sooner ceasing within the hot than temperate zones.*

Young persons in Europe frequently continue to make water in their beds even up to their *sixteenth* year; in Java children commonly leave off this habit with their second or third year; and although I made the most diligent inquiry, I was unable to find more than one, who continued the practice up to the *twelfth* year.

2. *The frequency of making urine visibly decreases with changing a cold for a hot climate, and vice versa, increases with return from a hot to a cold atmosphere.*

I knew many Europeans (myself being among

them), who voided urine but once in 36 hours, when newly arrived in Java, and never more than twice a day, when longer settled there, even although they made a plentiful use of cool drink. Whereas on my return to Europe in the winter of 1829, I observed myself, my children and several acquaintances made more than twelve urinous excretions a day, even though we drank much less than in India.

3. *Nephritic inflammation, colic, stone and other painful diseases of the kidneys, to judge from the silence of tropical physicians, are more unknown within than without the tropics.*

I never detected a track of those diseases in Java, though I confess that the number of the kidneys, which I dissected there, was very considerable. Whereas the *mucosa* of the *bladder* is, in my opinion, somewhat disposed to inflammation, in consequence very likely of an increased determination to the *hemorrhoidal* vessels (vd. Chap. 5. B. 4), communicating more to the bladder than kidneys. The symptoms characteristic of such an inflammation, which sometimes occurred on children (vd. Chap. 2. A. c.), more frequently on adult white persons in Java, are: *dysury, strangury, voiding of blood, slime and pus by urine* etc.

4. *True diabetes, especially mellea, a disease which occurs more or less at every age in cold climates, was not once seen by me in Java.*

In *Bengal* this disease is not quite unknown according to the reports of some physicians. We must consider, however, that the climate of *Bengal* is much more changeable from its higher latitude, than that of *Java*.

5. *Sanative secretion of urine in fevers (crisis per urinam) is less obvious within the torrid than temperate zones.*

On this subject there is but one voice among physicians, who have practised in both zones. — But whether or not there is any specific difference in the composition of urine of the *white* and *black* races or in their being predisposed to *calculus*, is a question, which cannot as yet be decided from lack of physico-chemical researches and pathological observations. The few cases of gravel and stone in the bladder, which I met with in *Java*, belonged to the mongrel race, i. e., to patients of a mixed European and Malay descent. I beg here to call the attention of the reader to my observation in the first chapter (c. 4.) on the secretory difference of a *white* and *black* skin.

B. The genitals.

It need not be mentioned, that the organic

display of the genitals is promoted and the sexual instinct favoured by atmospherical warmth, as every body knows, that the inhabitants of equinoctial countries sooner marry and beget children and are, in general, more libidinous than the population of higher latitudes. Nevertheless I wish to say a few words on the difference observed, in this respect, between *black* subjects and *Creoles* or *white* subjects born within the tropics. The latter do not attain puberty until two years after the former. If it has occurred, that Negro-girls *ten* and Malay girls *eleven* years old have their courses and bear children; it has never happened with Creole girls, for aught I know, before *twelve*. If it has occurred, that Negro-boys *twelve* and Malay boys *thirteen* years old beget children;—with Creole boys it has not, for aught I know, before their *fourteenth* year. Creole boys in Java, however, often attempt to supply their want of physical power by a good will. I will not talk of their already going to public women, although only fourteen, or of their already keeping concubines, when not exceeding fifteen or sixteen years, simply because such a practice makes little or no noise there, nor will it surprise any one, who is at all acquainted with eastern customs. But, what will be thought of my veracity, when I assure the reader, that among the offspring of Europeans in that island there are boys, who have hardly past their *tenth* year, running about with

a venereal gonorrhoea? Yet, such occurred four times in my practice at Samarang, and once I had like to incur the bitterest enmity of a mother, when I informed her with a well-meant intention, that her son had had intercourse with 'an unclean lady! Her indignation, however, was soon directed elsewhere, when the young rogue confessed, that one of the black house-maids had granted him such allowances as to place the whole matter beyond the possibility of a doubt.

Much has been said and written on the early cessation of *female fecundity* and *virile faculty* in hot climates, yet though true in general, tropical India affords many exceptions. I have known many women there, both of the genuine and mongrel white race, who have not ceased to bear children until their *forty second* year; and among the males of European, Arabian and Malay descent there were many, who afforded credible instances, that they had not lost the power of multiplying their kind until their *sixtieth* year. In this respect much depends on the manner in which life has been spent in youth.

Twice I saw *three-twins* born in Java, the parents of which in both cases were Javanese.

S e c o n d P a r t.

Precepts for nursing and bringing up white children
in hot countries.

I n t r o d u c t i o n.

Whether or not it is possible, that the human frame, after having migrated to foreign zones and after a long succession of *unmingled* generations, should at length be converted into another race, e. g. from *European* into *Malay* or *Negro* and *vice versa*, is a problem, in my opinion, not likely to be decided by human investigation, as neither *for* nor *against* that possibility can be alledged any sufficient reason. They, who deny it, always appeal to the fact, that the offspring of Europeans in tropical countries do not become black and, in general, change but little their features. But they do not consider, that the said offspring are bred in too European a manner, i. e., are in a great measure withdrawn from the influence of climate. For example a *European* child born in the East- or West-Indies is lodged

with its parents in a house built of stone, while an *Indian* child resides in an airy hut of foliage or bamboo. The *former* from the moment of birth is provided with European dress, a bed, bedstead, blankets, bed - curtains etc., while the *latter* sleeps in a state of nakedness on a rush-mat, exposed to the evaporation of the earth and the bites of insects. The *former* as soon as weaned already takes meat, while the food of the *latter* is restricted to mealy roots and fruits. The *former*, when he has attained the years of boyhood, walks out dressed with a hat, jacket, waist-coat, neck-cloth, shirt, pair of breeches, stockings, shoes and is besides attended by a servant, who carries behind him a parasol; while the *latter* in rain as well as in sun creeps quite naked, walks and amuses himself in the open air and, in order to cool himself, delights to leap into a brook or even into a puddle. *Creole* youths of the East- or West-Indies are generally employed as clerks and early begin to drink grog, wine, beer etc.; *Creole* maids pass their time, for the most part, in embroidering, harping and playing at cards, are fond, moreover, of drinking coffee, tea and chocolate; both lead a sedentary life and are attended from morning till night; — while *Indian* youths and maidens labour in the fields, drink water, take plain food, go bare-footed and wait upon themselves. Now I ask, why should we expect from those differences in the mode of

bringing up children and passing through life, that a *European* would be perfectly transformed into an *Indian*, and what right have we, if after some generations such a metamorphosis is not realized, to say that it is impossible?

I do not intend, however, to examine the solidity of the arguments, by which two opposite parties of natural philosophers, during half a century, have endeavoured to support their respective opinions on the above mentioned problem, and for this reason, that it would be to no purpose. My effort shall be limited to show, how it is possible to form the descendants of Europeans, capable after a few generations of enduring almost the same fatigues as the aboriginal inhabitants. For, to this end it is not necessary to assume gradually the wooly hair, bloblipped mouth and turned up nose of the *Negroes*, nor the broad cheeks, large mouth and flat nose of the *Malay*, but indeed it is:

First, to change a *thin, dense and blushy skin*, like that of Europeans, for a *thicker, looser and pale or yellowish one*;

Secondly, to change a *plethoric constitution and sanguine temperament*, like those of Europeans, for a *less plethoric and more phlegmatic one*.

This double change will be followed spontaneously by a lessened irritability of the *cutaneous, hepatic and intestinal vessels*, as also by

less *asthmatic oppression* in case of moving about in a hot atmosphere.

If you ask, how to attain to this, I answer: only by exactly and constantly obeying the hints, which nature throws out to us during our stay in tropical countries, as:

First, organic change of European skins by *gradual thickening* and *softening* (P. I. Chap. 1. b.), *increased perspiration* (ibid. c.), *tropical paleness* (ibid. b.) and *tropical furuncles* (ibid. e.).

Secondly, decrease of European plethora and warmth of blood by *retarded activity of the lungs* (P. I. Chap. 7. A.), *frequent loss of blood from the system of the vena portarum* (P. I. Chap. 5. B.), *gradual relaxation of the vascular tunics* (ibid.) and augmented secretion of bile (P. I. Chap. 7. A. 5.).

Those salutary efforts of nature, if already counteracted in infancy by a wrong method of nursing and education, are of course unsuccessful or will only effect the desideratum in degree; but if duly attended to, from the period of birth and carefully guarded against any neutralizing influence, they will in general be crowned with complete success. The precepts in reference to this, to be obeyed by European mothers, will be given in the following chapters.

F i r s t C h a p t e r .

Management of the umbilical cord.

The umbilical cord of white children born between the tropics should not, unless there is strong necessity, be tied too hastily!

As the communication between the infantile and maternal blood is not quite suspended, until the circulation of the newborn child has become independent by several crying respirations, there is no question that a hurried ligature and division of the umbilical cord can abridge the future health of the child. Experienced European physicians have long since been of opinion, that the cord should not be tied, until the umbilical arteries have ceased to beat and the new-born individual is duly respiring.

The fact I am now going to relate, has led me to think, that a hurried tying of the cord within tropical climates is more prejudicial to the offspring of *white* than *black* parents.

In my obstetric practice at *Samarang* it frequently happened, that both, European and Javanese women in labour, sent for me at one and the same time or at least nearly so. On such occasions I soon perceived, that the *umbilical pulsation* of new-born Europeans was stronger and continued longer than that of new-born

Javanese. My curiosity having been excited by this observation, I never let slip an opportunity but attended, more minutely, by means of my watch, to the duration of the *umbilical pulsation*, entered the results into a journal and, besides, noted to what race the new-born child belonged.

By this means I found, that the pulsations within the uppermost end of the cord of genuine Javanese and Malay children, in general, did not exceed *eight* or *ten* minutes, reckoned from the moment of first respiring, while that of new-born Creoles continued from *fifteen* to *twenty* minutes. A few of the latter, who looked very robust and plethoric, kept it longer than half an hour, and generally had some leakage of blood several days, after the cord had been tied with a double ligature.

By comparing this phenomenon with my observation made earlier, that the children of *white* parents in the East-Indies are much more subject to inflammatory fevers, bloody fluxes and convulsions, than those of *black* parents, I began to think that a proper treatment of the cord, immediately after birth, might conduce to some improvement in the health of *white* children born in hot climates. To that purpose I adopted in my obstetric attendance of European women the following custom, which during my later stay in Java I never abandoned except in case of any urgent accident, e. g. suspended animation of

the new-born child, hemorrhage from the womb etc.

While the woman is in labour, I take care to supply her chamber with a clean and fresh air by opening a window or door. As soon, however, as the child is born, I cause these to be shut for a while, lest the naked child be exposed to a draught. When informed by its crying, that it breathes, I leave it covered with a sheet between the mother's thighs for full ten minutes, attending only to give admittance of air to its mouth, and to prevent its grabbling little hands and feet from troubling the mother. This term being past (indifferently whether the secundines have come down mean while, or no), I divide the cord two hands' breadth from the child's belly, allowing one tablespoon-ful of blood to flow from its upper end, in case the child has a robust complexion. Both ends of the cord being shut with a ligature, I place the child in a tepid bath, where it passes sixteen or twenty minutes. — The intent of cutting the cord at so great a distance from the belly is this: to allow of any exportation of superabundant blood by the umbilical arteries, in order to avert, should it be the will of nature, future congestion within the infantile abdomen. — Leaving the bath the child is wrapped in a sheet and put on a mat-bed, in order to be wiped dry, which being done the abdominal end of the cord is to be examined. In case its

pulsation has ceased, as it generally has by this time, seeing there has elapsed full half an hour from first breathing, I tie it in the usual manner, i. e. with a double ligature about two inches from the child's belly, and then clip it. But if, in spite of a good respiration, the cord continues beating, after the child has been bathed and wiped, and if excelling in muscularity, I still allow two or three thimble-fuls of blood to flow before fastening the cord, an operation most conducive to such children, during the earlier months of life.

In Java it commonly continues *four* days after birth, until the tied remainder of the cord falls off. During this period I treat the navel in the same manner, as is usual in Europe, but only take care, that the compress is neither greased nor oiled, which if done, by means of tropical heat, never fails to produce a most abominable smell on or about the second day after birth. Instead of oiling the navel-compress I was accustomed to moisten it with brandy and water during some years, but having convinced myself afterwards, that such is of no use, I applied a dry compress and obtained the same good result. Besides, whenever the dietetical treatment of a new-born child was intrusted to my sole management, although its cord had not yet dropped, I caused it to be daily bathed in tepid water, the effect of which was always beneficial. After the bath I examined the cord, put a third ligature

on it, if necessary, clipped its withered lower end, changed the compress, and enclosed the belly within an umbilical band as usual.

The navel of *white* children in tropical India leaks a glutinous *lymph* for several days, after the cord has dropped off, and then only perfectly closes. Mean while I cover it with some dry lint, which is to be daily renewed, after bathing, and fastened with a compress together with a well-adapted umbilical band. As soon as the lymphatic excretion has stopped, lint and compress are no longer requisite, but the umbilical band should be worn for eight weeks longer, in order to prevent a navel-rupture and catching cold of the tender abdominal bowels.

Here it may be right to show, how to arrange an *umbilical band* for new-born children in hot countries. It should possess two qualities: first, be made of such stuff as will not overheat the infants' belly, e. g. of doubled calico; secondly, be cut out after such a fashion as will produce an easy and equal pressure on the convex surface of the belly. The umbilical band hitherto usual in the East-Indies presses too unequally and is too easily displaced, a circumstance, by which the navel is exposed to frequent shaking, and is more disposed to bleeding in the earlier days after birth. Preference therefore should be given to the umbilical band of Prof. *Joerg*, the middle piece of which corresponds to the

child's belly by an apt dimension and concaveness, and the smaller ends of which are provided with strings to be tied together on the left side ^{a)}. A copy of it is represented by fig. 1,

The precautions to be taken, in case the lymphatic excretion from the navel, after its getting rid of the cord, should continue too long or be mixed with *blood* and *pus*, will be detailed in the second Book. Besides, you will find it mentioned, in what manner the umbilical cord of new-born children is treated by the natives of the *Sunda-islands*.

S e c o n d C h a p t e r.

Bathing, cold affusion and inunction.

Daily bathing or cold affusion of the infantile body should never be neglected in tropical countries!

The above precept, though in general pretty well obeyed by white mothers in the East-Indies, is a matter more comprehensive and important to childrens' health, than many a mother knows.

The *first* bath should be considered as a

^{a)} *J. Ch. G. Joerg* Bemerkungen für Schwangere. Leipsick. 1826. p. 190.

cleansing of the skin and as a preparative for its new function, for which there is nothing more recommendable than pure river- spring- or rain-water. All additions, which have been excogitated to favour that effect, or to strengthen more promptly a new-born skin, are to be more or less deemed injurious, provided the *new comer* is animated and healthy. For instance, *soap* is too corrosive to its delicate skin and is moreover dangerous to its eyes. *Wine*, *arrack*, *vinegar* and such like will hurt by exciting the brain. Only some sweet oil or fresh butter will be harmless, if employed at first bathing for the purpose of more readily removing an abundant quantity of cheesy substance (*vernix caseosa*) often adherent to new-born skins. There is little or no occasion for this, however, as that substance, when once dried by the air, will of itself fall off after the next bath.

At tropical coasts, besides, we must attend particularly and see, that the bathing water of a new-born child is clear and pure. For, during the dry season we are mostly restricted to the use of river-water, which near the sea is not applicable, until kept within clay-vessels for a considerable time, because it is too much impregnated with earthy elements and putrescent vegetables. If used for bathing, when freshly drawn from the river, the new-born little one would be exposed to a serious *blepharophtholmy*.

The *warmth of a bath* in the earlier days after birth should more or less correspond to that of the human blood; — accordingly cold and boiling water are to be mixed in such proportions, as will give an agreeable tepidity nearly equal to 96° *Fahrenheit*, 28° *Réaumur* or 35° *Celsius*. But, this degree of bathing-warmth must be gradually diminished a while after, in order to strengthen or harden the infant's skin against atmospheric cold, — a method to be followed much longer without than within the tropics. For, without the tropics during nine months of the year the temperature of water is extremely low and obliges the mothers to continue for a long time after birth, to warm the washing and bathing water of their children; within the tropics, on the contrary, that necessity passes away much sooner, as the natural warmth of water all year long is kept at the same height as it is in the hottest summer of Europe.

Aboriginal nations within the torrid zone bathe their children in cold water even from the first or second day after birth. Whether or not such is prejudicial to their health, I could not perceive; whereas observation has taught me, that new-born Creole children are better kept from cold bathing until they have passed the period of *jaundice*, which continues from three to four weeks after birth. During that space of time nature, it seems, eagerly tries to transform a white

skin into accordance with a hot climate, but it may be troubled by the influence of a cold bath. Therefore it might be well, that white mothers in hot countries should continue to bathe their children in tepid water until the second month of life, and only then begin gradually to lessen the warmth of the bathing water to that of tropical riverwater. Such would be a task of about a week at tropical coasts, where the mean temperature of rain- and river-water is between 75° and 80° Fahr. In tropical mountains it would require a longer time on account of a lower temperature of the water.

One regular bath daily taken suffices, in my opinion, for a white child, till it is *five* or *six* months old. The best time of applying it is in the morning, as we observe then the least difference of natural warmth between water and atmosphere, a circumstance particularly beneficial to the rhythmus of the cutaneous function. It is a matter of course, that little children must be washed, as often as they soil themselves.

With the cutting of the *first teeth* tropical children enter into a period inclining much to fever and inflammation, a disposition generally more striking among *white* than *black* children, on which account I never forbore to exhort European mothers, henceforth to combine the regular application of a morning-bath with a peripherical affusion of cold water in the after-noon or

evening. Such is followed by a salutary evaporation of vital warmth, and proves an eminent expedient to prevent the infantile body not only from topical congestion of blood, but also to harden it against draughts of air and sudden decrease of atmospherical warmth. Elder children may even be affused in the morning instead of being bathed within a tub, whereby much time and trouble will be spared to those families remote from running water. The operation is performed out of a tea-dish during the earlier years of life, out of a halved cocoa-nut or small bucket at more advanced age. The utensil must be slowly emptied straight above the child's head, and such must be repeated ten or fifteen times following to obtain the effect in view.

To affuse one's self with cold water (Malay: *seram*), at least once a day, or to expose one's self naked to a shower of rain, is an old custom among the natives of the Indian archipelago, and not at all to be deemed wonderful; especially when one considers, that the temperature of the water is there always mild, i. e., early in the morning it is almost equal to the warmth of air and in the evening but a few degrees Fahr. cooler, than atmospherical shade. Without the least hesitation I recommend this custom as worthy of being imitated by the descendants of Europeans in tropical climates. That *catarrhal* and *rheumatical* indispositions, as well as *feverish eruptions*,

are sufficient motives for abstaining from this practice for a while, must be evident to every one; nor need I mention, that old age is less fitted for cold affusions, because of a cooler temperament.

The habit of the *Negroes* and some Indian nations, at stated periods to *anoint* the surface of the body with cocoa-oil, should likewise be reflected on in bringing up *white* children in hot climates, as it tends to mitigate solar influence on the skin, to moderate perspiration and thus to prevent catching cold. The benefit thus resulting to a *white* skin would perhaps be still greater, as its tissue might increase in suppleness and looseness, and evolve a higher faculty of separating superabundant elements of bile from the blood. *White* skins are but little endowed with that faculty, whence it is, that Europeans within the tropics are more subject to hepatic diseases than the aborigines. — The unpleasant smell of cocoa-oil, when exposed to the air, may be the cause that European mothers generally abhor its use. But, I assure them, that some salad-oils or usual pomade, mingled with any sort of perfume, would effect the same salutary end, as cocoa-oil.

T h i r d C h a p t e r .

D r e s s .

Tropical children should go naked until their fifth or sixth year!

Dress loses its value to health, if unnecessary to keep off the unpleasant impression of atmospheric cold. The natives of tropical climates seem but little to feel that impression, as we see them go naked or with only as much dress, as serves to cover their privy parts or to defend their head against a perpendicular sun. Even Europeans in hot countries, whenever they take their ease and are released from the tyrannical bonds of fashion, put off their clothes, a proof that these are burdensome to them.

Useless and superfluous dress continually worn will hurt in a threefold respect:

- 1) Obviating the easy motion of the limbs, it will weaken *muscular contractibility*.
- 2) Heating the skin beyond measure, it will cause an abundant perspiration instead of a constant and moderate perspiration, which will be followed at length by incurable debility of the *cutaneous vessels* and a constant disposition to *catarrhal* and *rheumatic* distempers.
- 3) Depriving the skin of the influence of at-

mospherical *oxygen* and *daylight*, it will hinder the *white* races from being perfectly seasoned within hot climates.

The latter point, being of particular importance to *white* children bred in hot countries, deserves a more detailed discussion.

If we consider, what modifications of colour, specific gravity (denseness) and chemical affinity are owing to a different degree of metallic oxydation, and how much the latter is dependent on the mediate influence of light and warmth, we cannot but fancy: that the various colours of the human race and the different degrees of sponginess or denseness, thickness or thinness, exhalative and absorbent power of their cutaneous parenchyma are imputable to different degrees of *cutaneous oxydation* (vd. P. I. Chap. 1. b. 3). From this view of the subject, the black, thick, velvetlike and always cool skin of the *Negroes* might be said to possess the greatest degree of oxydation (*sixth* by ascending); the dark-brown, soft and cool, but somewhat thinner skin of the *Malay* a meaner degree (*fifth* by ascending); the copper-coloured skin of the aboriginal *Americans* a meaner one (*fourth* by ascending); the yellow, thinner and less cool skin of the *Chinese* a meaner one (*third* by ascending); the pallid, warm, brittle and still thinner skin of *seasoned Europeans* a meaner one (*second* by ascending); the bluish, tight, ardent and thinnest skin of *unsea-*

soned northern *Europeans* the meanest or *first* degree.

Experience teaches us, that the utmost degree of cutaneous oxydation (*blackness*) corresponds to a superior vigour and steadiness of body within a hot atmosphere; the meanest degree (*blushy skin*), on the contrary, to an extreme weakness and predisposition to hepatic and bilious complaints. Who has not heard, that among tropical nations the *Negroes* most excel in labouring under a burning sky; that in this respect the dark-brown *Malay* surpass the lighter coloured *Chinese*; these the bleached *Europeans* settled for some time within the tropics; and lastly these their red-cheeked country-men newly arrived from Europe?

Observation moreover has taught us, that emigration to a hotter climate is always followed by a higher degree of cutaneous oxydation, provided the skin is exposed without restraint to the influence of day-light and atmospherical oxygen. The *Arabians* of the African sands, primitively of a brown colour, gradually became black, although unmixed with *Negroes*, and hence their constitution has become stronger and more indefatigable in the sun. — The *black Portuguese* of the East-Indies are suspected of not having kept pure their pedigree, consequently I cannot cite them. — Among *Chinese* transplanted to Java I knew more than one, who had changed his native

yellow for Javanese tan-colour. — Among *Europeans* long settled in Java, and their genuine descendants, I met some instances of the real Chinese yellow, and others who on the body had already commenced to grow copper-coloured. Such like phenomena, however, I only met on those Europeans, who stay much in the open air, frequently expose themselves to the sun and put off their customary dress, e. g. sailors, sportsmen and veteran soldiers. Those, on the contrary, who from their station in tropical colonies are daily obliged to wear a suit of European clothes and, at the same time, to lead a sedentary life, will advance but to the second degree of cutaneous oxydation, i. e., at most change their red cheeks for tropical paleness, and retain throughout life the infirmity and lassitude annexed to a white skin within a hot atmosphere.

The above exposition removes any doubt upon the question: viz., how to dress *white* children between the tropics, in order to make them strong and healthy? By leaving off whatever is unnecessary and superfluous one will with ease and safety attain that end. During the first two or three months of life, with the exception of an umbilical band there is nothing required but a *shirt* of thin cambric reaching to the feet (*kabaye*). To put a napkin between that vestment and the infant's back, in order to keep the latter clean may likewise be allowed. At tropical coasts a

sheet of cotton will suffice for a night-cover, while a *blanket* somewhat thicker in tropical mountain regions may be requisite, as the temperature betwixt day and night differs more. Thus behold the wardrobe of a new-born child in the torrid zone! — *Swathing clothes* are as useless there, as they would be pernicious to health, and God be praised, I had never occasion to remonstrate against them. *Stockings* and *biggins*, to be sure, are not yet quite out of use among the new-born offspring of Europeans; but I hope, that both will be abandoned, when I assure the mothers, that they are not only quite superfluous, but that the smell of European feet is increased by the former, and the predisposition to *convulsions* by the latter.

After *three* or *four* months, white sucklings at tropical coasts are so far advanced as to be able to pass the day without a shirt and the night without a sheet. The umbilical band may then be changed for the East-Indian *oto*, a sort of belly-cloth usual among young children and made of a double piece of calico, after the fashion seen in *fig. 2*. It is easy, and prevents the belly, while children are creeping, from being wounded or touched by the cold pavements of European houses.

When children begin to walk, attention must be paid, that their head is not exposed to the sun, from *nine* in the morning to *five* in the after-

noon. During these hours the rays of a tropical sun are too strong to permit staying in the open air without the head's being guarded by a light covering against the dangerous consequences of *siriasis* (sun-stroke). *Neck, breast and back* together with *arms, legs and feet*, from the third or fourth month to the fifth or sixth year of life, during the day ought to be left quite naked. By so doing a white infantile skin is enabled to absorb plenty of *light* and *oxygen*, a circumstance, which will benefit the future health as has already been shown. From the third month, the above shirt will do for a night-covering, added to a blanket in tropical highlands.

In the *sixth* year, white children bred in tropical colonies are generally sent to school and more admitted to social amusements. To allow them to go longer naked and bare-footed would indeed be unseemly. Notwithstanding I am far from approving, that a child of this age should be clothed in that complicated and burdensome apparel, which till now is usual among the white population of the torrid zone. For example, *neck-cloths* are only fitted to increase the disposition to *catarrhal* affection of the throat and salival glands. *Waist-coats, jackets, frocks* and *surtouts* are troublesome to the functions both of the lungs and skin, without reckoning their weakening influence on the whole system of muscles. *Stockings* and *boots* will tend still more to increase the

smell of feet. *Stays* and *bodices* predispose to hepatic, splenic and intestinal affections, induration of the ovaries, anomalous courses, difficult accouchments and carcinomatous degenerations of the womb. Parents therefore, who value their childrens' welfare, cannot do better than lay aside the great mass of useless clothing, and accommodate their childrens' dress from the sixth year to a plain and rational medium, which is not less conducive to health than consistent with decency. A suit of clothes, as follows, will suffice for that purpose.

a. Boys' dress.

- 1) *Easy shirts of cotton*; two sorts, one white, fine and elegant to be worn in the day, the other variegated and coarser for night-use.
- 2) *Wide pantaloons of gingham or nankin* of a pleasing colour; two sorts, one more elegant for the day, the other for the night.
- 3) An *Indian straw-hat* for defence against the sun.
- 4) A pair of *easy shoes* for walking abroad, together with a pair of *slippers* for the house.

b. Girls' dress.

- 1) *Wide coats with short sleeves* (supplying the place of shifts); two sorts, one of ordinary cotton for the night, the other of finer stuff (silk, if you please) and more exquisitely wrought, for the day-time.

- 2) A *light silk shawl* of the smaller sort to be worn abroad.
- 3) A *light silk hat*, or instead of it a *parasol*, for defence against the sun, when walking.
- 4) A pair of *easy shoes* and *slippers*.

Lastly it should be remarked, that tropical night-dress should always be proportioned to the habit worn in the day. In other words, he who uses a superfluous (woolen) dress in the day, requires a cover more than usual in the night. Most Europeans between the tropics neglect this precaution, whence result an innumerable multitude of *catarrhal*, *rheumatic* and *bilious* complaints.

F o u r t h C h a p t e r .

S l e e p .

Tropical children should sleep with the windows and doors open, not only in the daytime, but also in the night!

Concerning the time and duration of sleep for new-born children, this rule is observed by all the nations of the world: Let them sleep as often and as long as they wish, and avoid whatever would tend to disturb or avert it. As soon,

however, as they have passed the *first* year, the period of repose may be somewhat more fixed, e. g. a portion of sleep being assigned to the morning, another to the afternoon and the rest to the night. — From the end of the *third* till about the beginning of the *sixth* year, tropical children should continue to sleep some hours at noon, but when more advanced in years, they may be left at liberty to wake or sleep, as fancy may direct. Some of these, generally *white*, prefer play to sleep, but in this case they should be kept from walking about in the sun and be put earlier in the evening to bed.

While children sleep, we ought carefully to watch, lest they are exposed to any annoyance or noxious influence, as these.

1. *Noise and bustle.*

To bed new-born children in a noisy chamber or neighbourhood is most reprobable, as it not only every moment awakes them from sleep, but also predisposes them to nervous sensibility.

2. *An extreme cold and heat.*

An extreme cold in sleep will immediately depress and annihilate the vital functions, chiefly of new-born children, whose intrinsic warmth is but trifling. An excessive heat, on the contrary, will maintain a state of great irritability of the brain, nerves and blood-vessels, and thus deprive

sleep of its refreshing and soothing influence, particularly on such infants as are entering into the period of first teething. — To keep warm a young suckling, while it sleeps, is the most difficult part of all maternal duties in a country *remote from* the tropics, especially in winter. The necessities to it are: a warm room, bed and blankets, warm clothes and swaths, warming flasks and such like things. In the perpetual spring of *tropical highlands* it is much less necessary, — a thin dress for the day and a light cover for the night is quite sufficient. In the *tropical lowlands*, where an eternal summer reigns, a sleeping child requires to be cooled and not warmed. The requisites to which are:

- a) *removal of all superfluous clothing and covering;*
- b) *cool bedding;*
- c) *a cool bed-room.*

How to act in respect to a) has already been shown in the preceding chapter.

The best bedding for tropical climates, on account of coolness, is a mattress and pillow filled with short cotton (Malay: *kapoc*), a common produce of both Indies (afforded by „*Bombax pentandrum*“ Linn.). To put a blanket on the bed, before and after sleeping at noon, will add to its coolness.

The coolest and most airy bed-rooms within the hot zone are to be found in spacious and

isolated *garden-houses*, surrounded with a roofed colonnade. — *Bamboo-houses* are cooler than small and narrow stone buildings. — On the *ground-floor* it is cooler about noon, and *vice versa*, *up stairs* it is cooler during the night.

Whenever the temperature of houses rises to 85° Fahr. (= 23° Réaum. or 27° Cels.), as it generally does about noon in all houses and in the night at some establishments in tropical coasts, — keeping a window or door open obliquely against the bed is quite necessary during sleep. For it will not only insure the uninterrupted enjoyment of a pure air, but also procure the advantage of a greater coolness, that is to say, if out of door there is no actual calm. The common *sea-breeze* of tropical coasts, blowing at noon and but two or three degrees Fahr. cooler than the shady air of houses, is most conducive to sleep and does not expose a naked child to catching cold. The *land-breeze* of tropical coasts, arising in the night, is of no less value to sleep, and should be freely admitted into the bed-chambers of infants, as long as its cooling power does not exceed *five* or *six* degrees of Fahr. If it does, e. g. if the warmth of a room should be lowered by it from 85° about sun-set to 75° about midnight, then it would be better to keep a free passage of air opposite to the wind-ward, if practicable, or put a folding screen between the bed and open window or door. To shut up a

bed-chamber, where some one is sleeping either at noon or night, is highly reprehensible, unless the temperature out of doors be below 70° Fahr. — *Lattices* or *blinds* are preferable to glass windows within the hot zone, because they are at once a defence against rain, sun and tempest, and no hinderance to the free admission of air.

All plans, however, which we have now recommended to promote sleep, are insufficient, when an extraordinary heat, e. g. 90° to 100° Fahr. in the shade, is coexistent with a *calm*. An anxious and oppressive breath, then every where felt, will put one into a turbulent half-sleeping stupefaction, which wearies much more than strengthens the frame. In such a condition *cold affusion* (vd. Chap. 2.) remains the only effectual refuge, as it in a moment quenches the ardent heat of the skin, dissipates the orgasm of blood, spreads an agreeable coolness throughout the body and generally procures, — unless there be any impediment, — some hours of refreshing sleep.

3. *Corruption of air.*

To inhale a spoiled and impure air during sleep is more pernicious to tender than ripe age, as little children spend more time in sleep than full-grown individuals.

The most injurious is the *impure* and *stagnant air* of *houses* and *chambers*, where several animated beings have long breathed and perspired.

It enervates the frame and can even produce contagious diseases, — a reason more for continually keeping open the windows and doors during sleep within the tropics, — a practice, which can only be followed before and after sleep in northern winter.

An air, which is impregnated with *smoke*, *vapour of charcoal*, *stench* and *fragrant odours*, is likewise injurious, because it disposes to asthmatic, soporous and suffocative incidents. Therefore to cook, bake, or heat a smoothing iron, to burn a night-lamp, to place or leave flower-pots, perfumes, foul clothes and the excrements of infants within the sleeping chamber of a child, to neglect to scour the floor etc., should always be reprov'd, and even to fumigate should never be permitted but after a child's sleep.

Sleeping on the ground in tropical climates exposes the lungs to breathe an air, which is much impregnated with *carbonic acid gas* and apparently less injurious to *black* than *white* men. Whether or not, on the part of the former, such is attributable to a blood less susceptible of this gas inhaled by the breath, or to a skin better fitted for its quick exportation, I will not decide. But this far is certain, that Europeans rarely escape unhurt, after having slept on the ground throughout the night. On the following day they will complain of giddiness, headach, nausea, numbness of limbs etc. They had thus better

use a *bedstead* of some height, as towards the ground the carbonic acid gas is too much concentrated. Little children require a *railed* bedstead, lest they roll down.

I must not omit to observe, moreover, that a bed-chamber one pair of stairs from the ground is always preferable in hot countries to a room on the ground-floor, on account of a cleaner air and cooler nights. A room situated on a moist and boggy ground is not adapted for a bed-chamber, because it favours the origin of malign fevers. The same is applicable to such chambers, as are contiguous to the windward of pools, marshes and large rice-fields.

4. *A luminous daylight.*

The daylight should be tempered, but not wholly darkened at the place, where children are sleeping. A soft twilight is most congenial to sleep, whereas a bright lumination, more particularly, the direct entrance of sun-beams into the bed-chamber, deranges sleep and gives rise to several vexatious sensations, as : headach, giddiness, pain in the eyes etc. The glistening daylight of tropical noon is a torment insupportable within such houses, as are not duly provided against it. It can cause instantaneous blindness. It should, however, only be resisted by such preventives, as will not obviate the passage of air into the interior of houses. Of this class are:

- a) *a roofed colonnade*, intercepting the collateral rays of daylight and spreading a cool shade round the house;
- b) *bamboo shelters or penthouses* placed by the sun-side opposite to windows;
- c) *lattices or blinds* arranged in such a manner as to let in air, if ajar, but no sun;
- d) *a folding screen* ten feet high, placed on the luminous side of beds.

Besides, it would be conformable to the purpose, were Europeans of tropical colonies to have the inside of their bed-chambers painted *yellow, light-blue* or *light-green* instead of *white*, as they generally have in the East-Indies. For, whitened walls, though not directly illumined by the sun, reflect there a strong light most pernicious to the eyes, particularly of white men. Almost every year some Europeans leave Java afflicted with *amaurosis* or other diseases of the eyes, in a great measure to be imputed to the practice, universal among Europeans there, of having their houses whitened within and without.

5. *The bites of insects, chiefly of mosquitoes* (more troublesome in the hot than temperate zone).

The best defence against these are *bed-curtains* of *blue* or *green gauze*, permeable to air and at the same time softening the light. Bed-curtains of *cambric* or *shirting*, usual in some

families in Java, should be rejected as opposed to coolness and renovation of air during sleep, two things of much more consideration than the bites of mosquitoes.

In conclusion I cannot forbear to inform European mothers, that some of the black nursemaids are fond of tickling the genital organs of young children, in order to make them the sooner sleep. This detestable habit is ruinous not only to the moral, but to the physical welfare of children, and should be counteracted by the utmost vigilance and severest discipline on the part of mothers.

F i f t h C h a p t e r .

Exercise in the open air.

Tropical children should be early accustomed to use their hands and feet!

The perpetual warmth of a tropical atmosphere allows not only, from the day of birth, constant exposure to the open air, but also exemption from close dress, as has already been demonstrated. Both are to be considered as advantageous to infantile welfare. For there is nothing, which more strengthens the muscles, nerves, ligaments and lungs and more favours the digestion of food,

circulation of humours, regularity of secretions and excretions, and refreshing sleep, than a free and unrestrained motion of the limbs in the open air.

Mothers, therefore, should take care, that their children pass several hours a day in the open air, and see, that they learn to use their limbs and endure bodily exertions, a matter but too little heeded by *white* mothers in the *East- or West-Indies*. Their children are nearly to those of *black* parents, what high-born children in Europe are to low-born ones, that is to say, they are too much fondled and served, too early familiarized with comfort and luxury, and too little engaged with what is actually useful. See then the principal cause, why the descendants of Europeans in the *East- and West-Indies* are so frequently found to be invalid, flabby, lazy, enervated and altogether unfit for social intercourse!

Even a few days after birth, some gymnastic exercises are applicable to tropical children. For this purpose a mat is spread on a shady and dry place near the house-door. The little one after awaking in the morning or afternoon is put upon it and allowed to stretch its legs and arms as it pleases. If quiet, it is to be left on the back, and should it cry, it is not always to be taken up in the arms, but only turned over, a change, which will appease its anger, and induce it to

amuse itself with its little struggles, until it gets tired and falls asleep. This practice should not be hindered and, what is more, will in no wise hurt the child, provided it is attended to.

The heat of noon and rainy weather, however, are sufficient reasons for keeping a new-born child within the house, but its little exercises may be repeated by the open windows and doors. A retreat eminently adapted for tropical children, where they may spend the hottest hours of the day either in playing or sleeping, is the East-India „*pandoppo*“, a sort of byhouse open on four sides, but affording a shelter from a perpendicular sun by a sloping bent-roof, leaning upon four pillars. Under this, at noon, there is an agreeable and wholesome air.

Riding abroad in a covered baby's carriage is a suitable change for new-born children in hot countries, especially if their respiration wants energy, as is often the case after very speedy births.

Being carried in the arms is not approvable before the third month, as a younger child is but seldom able to keep its head in an upright position, nor should it be practised too often, lest the child should become disinclined to bodily exertion, which is but too often the case in hot climates.

After *six or seven months*, in general, children begin to *creep backwards*, and shortly after

forwards. By this time they want a spacious, airy and dry location, where they can amuse themselves on all fours, as frequently and as much as they please, without the least apprehension of their receiving hurt. *Creeping* is the best previous exercise for a child in order to *stand* or *walk*, nor does such expose it to the danger of falling, which always attends its first attempts at walking.

Children *beginning to walk* are yet far from being able to subsist without attendance, as yet they cannot take their own food, wash themselves, bathe, put off or on their clothes, go to bed, arise from bed and so on. But they would soon learn to do all these things, provided they were obliged to do so, and were not spoiled by the overofficiousness of black menials. For example, a child *three* years old, should no longer be permitted to take its food from another but with its own hands. A child, *five* or *six* years old, should begin to wash, comb its hair and clothe itself. One year older, it should have made such a progress in swimming as to be capable of bathing unwatched. From the *seventh* year it should go to school on foot and unescorted, the more, if the distance thither is not above a mile or a half. Nothing is more to be condemned than the practice of transporting tropical children in *carriages* or *palanquins*, especially when we consider, that their native inactivity is already sufficiently great.

It appears ridiculous, moreover, and leads to arrogance, if boys, hardly *eight* years old, when they walk abroad, are followed by a black servant, bearing an umbrella over their head. As soon as the seventh year is past, if the head is covered, the sun needs not to be so anxiously avoided as before that period, and a shower of rain in hot climates may be considered as a bath beneficial to that time of life, whence, as far as my experience goes, never resulted any harm.

The gymnastics better adapted for elder children are: *dancing, riding, vaulting, climbing, flinging, slinging, fencing*. All these exercises, save *dancing* and *riding*, are too much neglected by the *white* youths of the East- and West-Indies, one cause, in my opinion, that the complexion of the offspring of Europeans is, universally there, more languid and wearied than that of the *black* natives.

S i x t h C h a p t e r .

L a c t a t i o n .

Tropical children, without a strong necessity, should not begin to eat, until three or four months old!

That human suck is the proper and thus

the best food for new-born children, that all other foods of whatsoever kind are more or less a burden to the stomach during the earlier months of life, are matters verified by daily observation in tropical countries, and no longer questioned by physicians in Europe. At least the comparisons I made in Java between those children, who took only suck during the first three or four months, and those, who besides suck took other food, proved, that the former enjoyed a better health than the latter.

A. Lactation by the mother.

Mothers are endowed by nature with two breasts in order to suckle, and if without a good and sufficient reason they delegate that duty to another, they expose not only themselves, but their children to much trouble and danger. They themselves are likely again to become pregnant before duly restored from the last birth, a circumstance, which will deprive them of more strength, than lactation would have done, without calling into account the probability of a premature and infirm child at next in-lying. But, though the denial of milk to one's own child is not always followed by a new conception, the early exsiccation of the mother's breasts is, however, punished with an augmented determination to the womb and adjacent parts, a primordial cause of *hemorrhoids, anomalous courses, scirrhus in-*

duration and *carcinomatous tumefaction*, most frequent in hot countries.

The expectation of the child, repudiated from the breast of its mother, is still worse, as the uncertainty is great, whether or not there will be found a wetnurse of a healthy body and sound mind. This point will be more amply discussed, when I have shown in what cases lactation by the mother is *impossible*, in what cases it may be deemed *hazardous*, and what regimen is to be recommended to *white* mothers, in order that they may duly perform the function of suckling in hot climates.

Lactation by the mother is *impossible*: from want of lacteal secretion; from any deformity of the mother's nipples (e. g. excessive largeness or depression of the nipples, concretion of the lacteal ducts); from painful tumefaction, inflammation and suppuration of the breasts; from a topical defect of the child's mouth, an impediment at once to mothers and nurses (e. g. a wolf's palate, inveterate thrush etc.).

Lactation by the mother would be *hazardous*: a) for her own sake, in case of her being afflicted with a severe disease, or exhausted by loss of blood and former births, or naturally endowed with a phthisical and infirm constitution; b) for the child's sake, in case the mother is infected by any contagious disease (e. g. *syphilis*, *leprosy*, *itch*), or possessed with a temper exceedingly

irritable, or kept from observing a suitable regimen by her relations in life, or has past her fortieth year, or regained her courses, or again become pregnant.

Regimen for white mothers, who nurse their own children in tropical climates.

The pretence of being unfit for or withdrawn from suckling on account of one of those circumstances above mentioned is nowhere more frequent than among the *white* mothers of tropical colonies, and why they have been deemed unfeeling or averse to suckle their children, there exists a suspicion, which perhaps is not without some truth. Among the *white* mothers of Java, chiefly *Creole* (natives there), I knew more than one, who surrendered her child to a wetnurse, though she enjoyed an exemplary health and had two well-formed breasts full of suck. Yet, on the other hand, I met a still greater number of *white* mothers, who were actually impeded from undertaking or accomplishing the function of nursing from *want of suck, bad suck, weakness of body, inflamed breasts* and other obstacles, in my opinion, partly to be imputed to climate and partly to diet. Thus far is certain, that a *white* female in hot climates, to prevent unfitness for suckling, must avoid many things, which in no wise harm

black females. The chief care should be directed to her:

- 1) *breasts*,
- 2) *perspiration*,
- 3) *lochia*,
- 4) *digestion* and
- 5) *circulation*.

1. The *breasts* of pregnant women should, in general, be kept exempt from pressure by stays and other constraining vestments, in case they should be hindered from expanding and preparing themselves for a copious secretion of suck. — The *nipples* of *white* pregnant women should be daily fomented with brandy or arrack some months before lying in, lest they should become inflamed during the period of lactation, as they are apt to do. An *extreme depression of the nipples*, which might impede the act of sucking, should be improved by artificial lifting with a sucking bottle or earthen pipe, an experiment to be daily repeated during the later period of pregnancy. — From the very day of lying in, the mother's breasts should be often presented to the child, as there exists no better remedy for a torpid secretion of milk than frequent suction.

A slight degree of *inflammation* or *excoriation* of the *nipples*, caught within the first half year after child-birth, is no absolute motive for forthwith suspending lactation, as the pain would increase by so doing. Better allow the affected

breast to be emptied by periodic suction, and endeavour to cure the sore nipple by applying, several times daily, a liniment composed of:

Peruvian balm — one part;

Gum Arabic — two parts;

Best olive oil — one and a half part; and

Rose water — eight parts.

The above application must be carefully washed off each time, before the child is put to the breasts. — To alleviate the pain, caused by the child's mouth while sucking, a particular kind of *sucking bottle* has been invented, through which the suck might be drawn out of the mother's breasts; but this trial often fails.

2. *Human perspiration* within a hot climate is, in process of time, most promoted by a light and airy dress, as well as by frequent cold baths or affusions. This rule holds good even to pregnant and women giving suck, the *two first* weeks of child-bed excepted, during which time the female body is extremely disposed to catching cold, and consequentially they should abstain from cold baths.

3. The *lochia* of *white* females in tropical climates require to be copious, and should thus be preserved from injurious or suppressive influences, as in particular: a *cold bath* taken too early; walking *bare-footed* on the pavement of houses; *astringent washes* applied to the vagina; and the internal use of *emmenagogues* or *hot drastics*.

As to the *cold bath* or *cold affusion* hazarded in the first days of child-bed, it verifies the vulgar adage: „the pitcher swims, until it breaks“! I have known Creole women try it at three or four births following, and that too unpunished, but after the fourth and fifth trial fall into a severe puerperal fever.

Walking *bare-footed* on a cold pavement is an imprudent practice among *white* women lying in, who have not been accustomed to do so from their infancy. If nothing worse ensues, a decrease of the lochial discharge and depravation of suck will be the consequence. — The same inconveniences are to be expected from washing the genitals with *vinegar* or any other *astringent* instead of with tepid water, in the first days of childbed, a common habit of Creole women in Java, intent on a speedy *status quo* of the vagina.

But there is nothing more injurious to *white* women lying in between the tropics, than taking an *emmenagogue* or *drastic* potion to effect a prompter despatch of the lochia, — a practice deemed indispensable by the Javanese midwives, who are always in dread, lest some noxious or contaminated blood should be retained in the womb. At *Samarang* I was acquainted with a midwife, who chose the following hodge - podge of vegetables in the preparation of such a potion, as :

- Cmokus* (cubebbs);
Djinten itam (the seeds of *Nigella Indica*);
Adas manis (the seeds of *Anisum vulg.*);
Kambang tapping (flower-buds bitter and astringent, unknown);
Kambang adilawe (the subastringent catkins of *Rottlera tiliacifolia*);
Djonggrahab (needle-like foliage, unknown);
Moocie (caraway);
Catumbar (coriander);
Cayoo ooles (insipid pericarps, unknown);
Sprantoo (astringent pericarps, unknown);
Poolas ari (the bark of *Alyxia stellata*);
Sintoc (the bark of *Cinnamomum sintoc*);
Massoi (the bark of *Cinnamomum Burmanni*);
Palla (nutmeg);
Cayoo manis tjina (liquorice wood);
Cayoo manis djangan (the bark of *Cinnamomum Javanicum*);
Cayoo anyen (a fibrillous insipid wood);
Cayoo setjang (the wood of *Caesalpinia Sappan*);
Kentjor (the root of *Curcuma Zedoaria*);
Tjenkee (cloves);
Sidowaya (astringent flowers, unknown);
Cayoo rappet (a mucilaginous bark, unknown);
Tommo-lawa (the root of *Kaempferia Galanga*).

The lying-in women of a *brown* complexion (Malay), whom I saw use the above incentive, never suffered any perceptible bad consequence,

which perhaps may be imputed to their greater phlegm, whereas those of the *white* race, who allowed themselves to be persuaded to that practice, without exception became unfit for suckling, either from a total suppression of lacteal secretion, or from a poisonous corruption of the suck, from a severe nervous affection or inflammation of the womb etc.

Whenever the lochia of a *white* female are too scanty or too early cease: *warm poultices on the regio pubis, leeches on the inside of the thighs, tepid and demulcent clysters, a good dose of castor-oil or Seidlitz-powder (pulvis aërophorus), together with warm covering for the feet,* are the remedies, which prove most successful in hot climates.

4. For the sake of *digestion*, a white mother giving suck should pay attention to the following hints. — Some weeks after lying in she does well, if she contents herself with light, nutritious and cooling food, as: *rice, sago, cassavi, arrow-root, barley, biscuit, new greens, boiled fruits, particularly bananas (even unboiled ones), likewise broth unspiced and fresh fish.* By and by she may pass to a more strengthening food, e. g. *soft-boiled eggs, roast meat, young poultry, game and so on. Salt, capsicum, onions, cocoamilk and subaromatic herbage, the usual accompaniments of East-Indian kerri and sambal,* are harmless, but the hotter spices: *pepper, macis, nutmeg,*

cinnamon, cloves etc. should be abstained from. *Lettuce* is less hurtful than people commonly suppose, provided it is not mixed with rancid oil and sour vinegar. Aliments long kept, far transported, smoaked, pickled, fermenting or greasy will injure the lacteal secretion, viz. *transatlantic butter, cheese, ham, sausage, pie, pastry, stock-fish, herring, anchovy, pickled cabbage, beans* and such like more.

The best drinks in the earlier weeks of childbed are: *pure water, sugar-water, rice-water, barley-water, orgeat* and *tea*, besides *lemonade* and the water of *almost ripe cocoas*, which are better adapted for youthful and plethoric females, on account of their cooling and calming virtue. Afterwards a dish of *unspiced chocolate* and *coffee* (unless too strong) may be at times allowed, but the use of *beer, wine* and *liqueurs* should always be forbidden to a lactant woman of the white race.

5. As regards the *circulation*, I wish to observe, that any thing agitating the blood, or too greatly increasing the vascular irritability of particular systems, has an injurious influence on the lacteal secretion of *white* women in tropical climates. This observation chiefly alludes to: *early arising from childbed; stimulant food and drink; breathing a damp air; great emotion of mind; constant irkesomeness and uneasiness of mind; great bodily exertion, e. g. dancing; needless*

interruption of sleep. *Rest and quietude* in all circumstances of life are two principal requisites to a faultless secretion of suck, particularly in the earlier period of lactation. For this reason an airy and cool bed-chamber, free from noise, is of the very greatest importance to white lactants in hot countries. Accordingly it would be well, if they early accustomed their babes to be suckled at appointed times, e. g., at first at every second hour, by and by at every third hour and so on progressively.

In the later period of lactation, however, they daily require a moderate exercise, a short walk on foot or in a carriage during the coolness of tropical mornings and evenings.

B. Lactation by a nurse.

If a child is deprived of its mother's breasts from whatever cause, lactation by a nurse is the best substitute, provided the female to be charged with that function is thus qualified.

- 1) Neither too *young*, nor too *old*. — One between twenty and thirty is the fittest.
- 2) Delivered of a child neither too long *before*, nor too long *after* the mother whose child she is to suckle. — The difference should not exceed six weeks at most.
- 3) Not having had upon the whole more than *three* children.

- 4) Descended from *healthy parents* and bred in the *country*.
- 5) Possessed of *two breasts* safe, well-formed and abounding in suck. The *nipples* in particular must be exempted from any sore, and emit the suck unhindered.
- 6) Bearing all perceivable signs of a *healthy* and *vigorous constitution*, to wit: a well-proportioned frame, neither too thick, nor too tall, nor too lank; sound lips and gums; sound teeth; a clean tongue; a clean breath; a sound palate; clean nostrils; clean ears; sound eye-lids and bulbs; a clean head; a skin sound from head to foot and without any anomaly of colour, warmth and perspiration; sound arm-pits; sound groins; sound *labia* and *nymphae*; a sound *vagina*, *urethra* and *os uteri*; a sound *anus*; sound toes; sound bones and joints. There must be no trace of contagious diseases, either present or precedent, in particular of: *syphilis*, *leprosy*, *framboesia* and *itch*. Ulcers, pustules, spots, scars, the whites etc. are always to be suspected. The examination of the *os uteri*, requiring a particular dexterity in the management of *uterine specula*, is never to be omitted.
- 7) The *child exhibited* by the nurse, and by her lately suckled, must show a healthy complexion and be exempt in particular from:

thrush, diarrhoea, a sore anus, a puffed up belly, vomiting and eruption of the skin. But above all it must be accompanied with an authentic attestation, that it is the very child of the nurse in question and consequently, that she has not substituted a strange and healthy one for her own sick or defunct one (as I have seen done in Java).

- 8) The *moral* and *intellectual* qualities of a nurse, besides, are of some consideration. For, although it is uncertain that babes, as is believed by many people, can imbibe a woman's nature by her suck, yet it has been proved by observation, that those wet-nurses who are stupid, superstitious, malicious, choleric, jealous, libidinous, voracious and secret-eaters, do much mischief.

But how are we to satisfy ourselves, that a female possesses all these qualifications? Simply in two ways: searching after positive information as regards the *first four* and the *eighth* points, and consulting with a clever physician as regards the *fifth*, *sixth* and *seventh*. Both are intricate and difficult. To obtain certain information, particularly concerning the *fourth* and *eighth* points, will often be quite impossible. The physician, who is consulted on the matter, will be under the necessity of, several times, repeating his investigations, in case he should be mistaken, especially about the question, whether a venereal in-

fection might have taken place but a little while previously and as yet had exhibited no perceptible sign of its existence. In the mean while it will be necessary to keep a strict watch on the individual under examination. Such will require some weeks, though it is uncertain, whether or not the babe can wait so long.

Suppose, however, in due time there has been found a woman, who has all these qualifications, and has been recommended by a favourable declaration of a physician as well as by the attestations of others, we are not yet certain, that her milk is of a good quality: It remains dubious at all events, whether the milk of such a woman has not the invisible seed of some caco-chymic disease, which could disturb for life the health of the infant intrusted to her care. This doubt cannot be wholly solved by a physical examination either of the nurse or her child, as has been proved by many an unfortunate example. If we knew an infallible mark of distinction between *healthy* and *unhealthy* suck, we might be able to prevent any mischief eventually arising from that uncertainty, but till the present time we are totally ignorant of any such indication. At least those marks recommended by old writers (e. g., that healthy suck is *pale blue* and, when put into a glass of water, exhibits the appearance of a *fair cloud*) are fallacious, and whether or not the microscope is a safe guide in trying suck,

as has lately been affirmed by *Alex. Donné*, must yet be decided by longer observation ^b).

Remarks on choosing and engaging a wet-nurse in tropical countries.

Sucking children, who exchange the mother's breasts for those of a nurse, for what reason is of no consequence, run much greater risk in hot than in other climates. There the choice of a wet-nurse is restricted to *black* women, who, it is well known, have neither moral nor spiritual qualifications, and what is more, generally leave us in the dark as to their parental relations. Such being the case, how like is it, in spite of our utmost circumspection, to alight upon a female, whose blood is infected, particularly in the large sea-towns of the torrid zone, where such a corruption of morals has spread among the black population, that there hardly can be found a family, who suffers not from *leprosy*, *syphilis*, *framboesia* or at least from *itch*!

I am unable, therefore, to offer any better advice to *white* mothers living at tropical coasts, than that they should never resolve to take a wetnurse without urgent necessity, and when such

b) *Alex. Donné* du lait et en particulier de celui de nourrices
Paris. 1837.

is the case, that they should look out for a female native of the interior or highlands, who has been subjected to a previous strict examination. To this I will add one or two brief rules on the demeanour to be observed towards black wet-nurses, as I have known many of these injure the child committed to their charge, either from stupidity and superstition or from malicious design.

The nurse is engaged upon these inviolable terms:

- 1) To nourish the babe with the contents of her breasts, exclusively of any other food; during the space of *three* or *four* months, and afterwards to abstain from giving it its food (as a tender and loving mother will not forbear doing this with her own hand).
- 2) Never to walk out without permission, nor remove further from the house, than has been allowed.

Having bound the nurse, we cause her immediately to take a tepid bath and change her clothes, — then surrender the babe to her. That her own child must be sent back, as soon as the engagement has taken place, need not be told.

In *eating* and *drinking*, a black wetnurse requires more freedom than a white one, as her digestion is in general better and her blood less subject to orgasm. She may thus be allowed to satisfy her appetite as often as she pleases with

the usual aliments of her country, as: *rice, cassavi, Indian corn, fresh fish, fresh meat, capsicum, farinaceous fruits and roots, tea, coffee* etc. Even a moderate use of *beer* may be granted to her, as in a few cases I found, that the lacteal secretion increased by it, without any inconvenience to the children.

As to *dress*, a tropical nurse should retain the garb of her country, which is more in accordance with common sense than the fashions of Europe.

As regards *cleannes* of body, there is nothing to be remarked, but that it should never be neglected, an admonition superfluous to black East-Indian women, who are attached to the laudable practice of daily bathing and affusing themselves.

A black nurse must not be prevented from *sleep*, as she is naturally inclined to it; nevertheless we may insist upon her taking a regular walk in the open air every morning and afternoon. But never should we allow her to walk far from home with the babe, at least not without a safe convoy, otherwise it is to be feared, that she would visit the Indian bazaar, places of meeting every kind of agents, which in a short time can destroy infantile health. To the same intent we should forbid her to hold converse with other black people, servants and nurses not excepted, for I have seen that it is a frequent source of

private quackery, quarrels and troubles, which always turn to the child's prejudice.

In conclusion we ought to keep a strict watch on the *mental display* of black nurses, as observation has taught, that they are subject to occasional fits of vehement *anger, jealousy, wrath* and *secret rage*. But, unless to a quick eye, it is impossible to detect them in such a fit, as they have learned to dissemble their features, at the very moment of extremest passion, in so skilful a manner, that they appear as if nothing had happened. Nevertheless their milk converts itself into a poison by each fit of the above kind, and necessitates us to suspend lactation for two or three days, to desire them to take a purgative salt, to get their breasts sucked out by a full-grown person, and in the mean time to appease the child's stomach with any other food, a circumstance to be more fully detailed in the next chapter.

S e v e n t h C h a p t e r.

Nursing without suck.

What food is most preferable for that purpose between the tropics?

By artificial nursing is meant the keeping

alive new-born children by means of any other food than human suck, until the usual period of delactation. Observation has taught us, it is true, that such an attempt but rarely meets with perfect success, in so much as there is no food, which can wholly supply the place of human suck. There are two cases, however, which leave us no other choice, viz. 1) *an absolute want of suck*; and 2) *inability to suck*. The former case exists, when the mother of a child dies or cannot suckle, and when a wet-nurse can neither be found nor engaged from want of pecuniary means; the latter, when the child is prevented by some defect of the mouth from deriving its sustenance from the mother's breasts.

Physicians in Europe have bestowed much labour in endeavouring to find out, what food is the best substitute for human suck. Formerly there was in use a meal pap mixed with animal milk, which soon fell into disrepute, as it proved the frequent cause of *severe constipation, jaundice, worms, acescency, vomiting, atrophy, scrofula* and even of *convulsions*. Physicians of later times recommended a *goat* as nurse, but earned no great applause, as it was soon found, that goat-milk is too creamy for new-born children and that every goat is not willing to yield her milk to a sucking child. They deemed it necessary to try still other sorts of food, particularly: *pap of biscuit, of white bread, of salep and arrow-*

root, rice and barley-water, sweet whey, thin pigeons'broth, newlaid yolks mixed with water and sugar, and fresh cow-milk boiled.

Thin *biscuit-pap* was found to answer well for children of two or three months old, but too hard for younger ones. *Sweet whey* proved useful during the first two or three weeks of life, but was not sufficiently nutrimental for elder children. — *Diluted yolks* were recommended by some physicians. — But most declared in favour of *cow-milk*, on which account I shall here add a few cautions to be observed in making use of that food.

The milk must be taken from a cow in good health and not too old, accustomed to be fed with wholesome fodder (fresh grass if possible). The cow must be milked three or four times a day. Her udders while being stroked must be clean. The milk thus obtained, while yet fresh, must be put on the fire within a clean earthen or tin vessel. While boiling it must be often skimmed, in order to get off its creamy elements. Then it is to be poured into a clean bottle, shut with a glass stopper and kept in a cool place. As often as the hour approaches, when the child is to be fed, a sufficient quantity of that milk sweetened with some refined sugar is put into a sucking bottle, the upper end of which is fitted to an ivory protuberance, armed with a piece of sponge, which has been cleared by boiling

and intended for a nipple. While the latter is embraced by the sucking lips of the babe, the curved lower end of the sucking bottle is placed in hot water, in order to impart a proper degree of warmth to the milk enclosed. This operation is repeated nearly as often a day, as mothers are wont to give their children the breast. But some precaution must be taken in order to prevent the infant from too hastily sucking the presented portion of milk, in case its stomach should be overloaded. Besides we must see, that its daily stools are in proportion to its consumption of milk, in order to lessen the single rations, if deemed necessary, or prolong the intervals. — Several physicians recommend the dilution of cow-milk by adding a third part of water, during the first or two first months of life. — Cow-milk, which has been kept longer than six hours, is not fit for use. — The piece of sponge, which serves for a nipple, must be properly washed after each suction.

Such is the result of the trials made by physicians in Europe, to find out what food is the most proper to supply the place of human milk, in case necessity should compel us to nurse a newborn child without it.

Foods to be tried between the tropics.

As yet it has not been decided by a sufficient number of facts, what sort of food is the

most preferable between the tropics, neither can it be by one practitioner, seeing that tropical sucklings are but very seldom deprived of human milk. For, the office of a wet-nurse in the houses of Europeans in tropical colonies entitles them to live in such a *dulci far niente*, that there never lacks a sufficient number of black mothers, who readily offer themselves for that service without regarding their own offspring. These offers, alas, are but too frequently accepted by white mothers, who either can not or will not suckle. We know, however, from the preceding chapter, how much is risked by taking a black nurse, more especially in seaports, where so often it has happened, that the female elected was constitutionally affected and ruined for life the young one intrusted to her care. For this reason we would have wished, that in tropical countries there had been approved by successful trials a food fitted to sustain the life of new-born children without the aid of the human breasts.

Cow-Milk.

The proposed trial should first be made of cow-milk, as its substitution for human suck has already met with success in Europe. Peradventure a successful trial of it has already been made at some tropical establishments, but unknown in Dutch India, and so long as it is so, a white mother will hardly be induced to yield her child

to the first trial. Once, however, I had nearly persuaded a Creole mother in Samarang, who by imprudent dancing had suddenly lost her milk and could not forthwith find an apt nurse. At my solicitation she bought without delay a sound milk-cow, and we agreed on her being milked four times a day, lest the milk should be influenced by atmospherical heat. For a few days matters went on as well as could be expected. But by and by I was informed, that the babe had repeatedly vomited the cow-milk, which it had taken, and consequently had got an aversion for it, — such was the reason, that the cow had been dismissed and a wet-nurse, who accidentally offered her services, engaged in its stead. Some days after, however, I discovered that the black maid-servant, who was charged with preparing the cow-milk, had neglected to milk her regularly, and had privately given to the infant several portions of the usual coffee and tea-milk, bought by the white families in Java, but rarely fresh and very often adulterated, as every one knows.

The above occurrence is mentioned in order to prove, that a trial of fresh cow-milk in behalf of artificial nursing is practicable in some tracts of the torrid zone. The cows there do not indeed afford the same quantity of milk as those in Europe, chiefly because in the dry season it happens, that there is not to be found any other grass than that, which is brought from the forests. However

as such can be done for riding and coach-horses, kept in Java by most of the European families, the same may be done in behalf of cows. The physicians of tropical colonies, accordingly, will not take it amiss at my inviting them never to omit an opportunity of making the above trial. By so doing they would assist the welfare of European mothers, who are obliged by divine providence to leave the land of their fathers for a settlement between the tropics.

Biscuit-pap.

In the transactions of the Batavian Society of arts and sciences of 1814 (Vol. VII. No. 1.) there has been published an answer deemed the most successful to the prize-question: what is the most proper food for young children not suckled by their mothers or nurses? The author of that treatise *Corn. Terne*, M. D. of *Leyden*, recommends a pap composed of biscuit, water of harts-horn and sugar. But he does not say, whether his trial of that food has been made within the hot or temperate zone, a question, in my opinion, of the greatest importance when we consider, that some food may be suitable for one climate and not for another. At least from the author's expressions at page 17, which run thus: »I have »seen many children thrive exceedingly well, who »were nursed with that pap, and several of these »for half a year were subject neither to accescency,

»nor any other illness«, — it does not appear, whether those children belonged to *Batavia* or *Leyden*. Neither does such appear from any other passage of the treatise, and thus we remain in the dark as to the part of the world, where the food in question has been first tried.

As to my own observations, I have frequently seen white sucklings in Java nursed with the biscuit-pap of Dr. *Terne*, but not once without the aid of human milk. Combined with the latter it appeared to be a useful and recommendatory food for children already three months old, principally as a relief to infirm mothers or nurses. Whether or not it is adapted to keep alive younger tropical sucklings of white parents, during the first three or four months of life and who are deprived of the breasts, I am unable to say, but I presume that such an attempt would disturb digestion and consequently cause bodily distempers.

The manner of preparing the said biscuit-pap is simply thus: Take some biscuit of the best wheat-flour, well-fermented and twice baked; pound it; put it on the fire in a small porcelain or earthen pan; and pour upon it, while constantly stirring it with a spoon, as much water of hartshorn, as will make it a smooth pap of the same consistence as sirup. A moderate portion of it put into a saucer and sweetened with sugar, when lukewarm, is to be administered in a teaspoon to

the nursling, after a loitering manner and at stated periods. — The best biscuit to be had in Java is a finer sort of American ship-biscuit, a sufficient quantity of which should be bought at once and kept from spoiling by being frequently exposed to the air and once a month to a heated oven.

As to the *water of hartshorn*, I may observe, that some children dislike its taste even when weak much more, than others do, when stronger. On this account it is always better to procure it from shops, where it is prepared after a proper formulary, than trust to preparing it at home. For instance:

Rec. *Spiritus cornu cervi* ℥j.

Aquae destillatae ℥xij.

M. D. S. Water of hartshorn.

Of this liquid we can take the necessary quantity, according to the taste of the child, and add it to biscuit mingled with common water.

Yolk-milk.

The raw yolk of a new-laid hen-egg, mixed with a sufficient quantity of cold water, previously boiled, and some fine sugarcandy, affords a milky liquor, which greatly resembles the human milk. This artificial milk is preferable in my opinion to biscuit-pap and all the other foods I had an opportunity of trying, in order to nurse white sucklings, deprived of the mother's breasts in hot

countries, at least during the first three or four months of life. It is very nutritious, light of digestion, not favouring constipation, but lessening the infantile predisposition to intestinal acescency.

The yolk of an egg, we know, is destined to nourish a tender chicken while being hatched. From this one circumstance the milk prepared of it might be entitled to supply the place of suck to new-born children, although not yet recommended by such eminent physicians as *van der Haar*, *Joerg* and others. To prepare it, moreover, is exceedingly easy and certainly not expensive, as new-laid eggs all the year long are always to be had within the hot zone. For such reasons at Samarang I never hesitated to recommend it to those mothers, who happened to be distressed for want of suck. There were few, it is true, among these who reflected on my advice, or obeyed it longer than two or three weeks, having no great faith to put in it and consequently always on the watch for a wet-nurse. Yet it was by yolk-milk, that they were released from their embarrassment, and that their children while nursed with it were preserved in good health. Once, indeed, I saw it happen that a child three months old, which had lost its ability to suck from an extreme degree of thrush, was kept alive by the sole means of this food during a period of *seven* weeks.

There are two ways of administering the yolk-milk. First, we allow it to be slowly sucked like cow-milk through a piece of sponge, previously cleansed by boiling and affixed to the upper end of a sucking bottle, in which case it must be sufficiently diluted, lest the nursling take too much food at once. Twenty four tablespoon-fuls of water to one yolk is not too much during the first month of life. This quantity of water, however, is to be gradually lessened as the child advances in age, e. g. a spoon-ful may be dropped every week. Secondly, the yolk-milk can be administered with a teaspoon, in which case less water is required to dilute it, as there is not the like danger of the child's surfeiting itself. To make warm a single portion of yolk-milk, while being administered, is not necessary in tropical countries, but should people prefer doing so, they should not exceed the 96th degree of Fahr., lest this liquor become indigestible. — To prepare each portion of a fresh and new-laid egg; to lay aside the unconsumed remainder of a portion; to clear off the tread and white of an egg, before its yolk is mixed with water, are matters sufficiently known. The quantity of sugarcandy required to sweeten it, depends on the child's taste. Nurslings of a more advanced period may take a little addition of salt.

Barley and sago-water.

Both these foods proved useful in a few cases where I was obliged in *Samarang*, to forbid lactation for one, two or three days, on account of mental emotion or transient indisposition of mothers or nurses. The water of barley as well as of sago must be sweetened with sugar and warmed before administered. To prepare the former, it is necessary to take the finest sort of barley, newly brought from Europe and quite unspoiled; to prepare the latter, the best and finest sort of sago. — That the mother's and nurse's breasts must be repeatedly emptied by an adult person, before the suckling is again applied after an intermediate use of either, has already been mentioned in the former chapter.

Sugar-water.

To appease a crying child, that finds the mother's breasts empty at the first and second days after birth, East-Indian people have a frequent recourse to *honey* or some *sirup* procured from the shops. These substances, if kept for any length of time, are never exempt from corruption and but rarely fail to indispose a newborn child, sufficient reasons that they should be rejected. *Lukewarm sugar-water* is much preferable to them, as it can be procured fresh every moment. But this food suffices only for the first

two or three days after birth, and one can easily conceive, that it must be changed for a more nutritious, in case the lacteal secretion should longer cease to make its appearance.

The noxious operation of *sucking-bags* I shall pass over in silence, because they are now almost out of use.

E i g h t h C h a p t e r .

Delactation and after-nutrication.

A. Delactation.

White tropical sucklings, if possible, should never be weaned too early!

Sucking children, whose mothers or nurses are of a sound constitution and abound in suck, want no other food until the cutting of the first milk-teeth, which generally happens in the sixth or seventh month of life (vd. P. I. Chap. 8. 1.). I have observed moreover, that those children, who have subsisted so long on mere suck, mostly enjoy an excellent health. But among *white* mothers in tropical climates there are very few, who can continue so long to give suck, if not aided by *accessory food*. To appoint a fixed term for this would be impossible, seeing that every child

makes not a like progress in digestion. From the *fourth* month, however, we may hope for a good success eleven times in twelve, if the food is administered with due caution.

The best *accessory foods* for tropical sucklings, entering into the *fourth* month, are: a thin *biscuit-pap* with water of hartshorn; *yolk-milk*, 16 or 12 tablespoon-fuls of water to one yolk; *barley*, *sago*, *arrow-root* and *rice-water*, sweetened with sugar. The two former are more proper for those sucklings, who are lean, pale and much disposed to acescency; the four latter more to such as are plethoric and robust. In choosing, however, we should have some regard to a child's taste. *Rice-water* should always be cleared of unpounded grains, which are indigestible by infantile stomachs.

But the principal rule is always to continue the use of the *same* accessory food, which has been once chosen, as observation has taught, that frequent changes, as well as the contemporary use of diverse foods, are most detrimental to the digestive function of sucklings.

To adjust the quantity of food allowable for one portion, we must attend to what has been taken with an appetite by a suckling first eating, and be guided accordingly. By so doing we will hardly be in danger of giving more food, than can be digested. But for the more surety, we ought sometimes to compare the copiousness of

stools with the quantity of the consumed food, and finding that the former are too scanty, to resolve on a provisional reduction or increased dilution of the latter.

At first sucklings should obtain but *one* daily portion of accessory food. Should they retain their health two or three weeks from the period of taking it, they are entitled to a *second* portion. But to this we should restrict them for six or eight weeks. To give one of these little meals between *eight* and *twelve* in the forenoon, the other between *four* and *eight* in the afternoon, would be most recommendable. Eating during the night should never be permitted in infancy!

When a couple of milk-teeth are coming to light, the accessory food hitherto administered is to be made more nutritious, e. g. by increasing the consistence of *biscuit-pap*, or combining it with *half* or *one egg's-yolk*, or by gradually changing *sago*, *arrow-root* and *rice-water* into a smooth and gluey *pap*. I have made use of the word „gradually“, because, if this change is too sudden, it frequently happens; that a casual sickness of the little one necessitates us to return to the former dilution, a circumstance which is by no means agreeable to most sucklings.

From the *eighth month*, a new (*third*) portion of accessory food is to be added and a proportionate quantity of suck consequently to be subtracted. The same addition and subtraction

is to be practised again after five or six weeks and to be henceforth repeated, until sucklings have reached their *thirteenth* month, and the number of their little repasts have risen to *six* or *seven* within twenty four hours. Now, if well, they may abandon the mother's breasts.

Such a periodic addition of food and subtraction of suck is what we call *delactation* or *weaning*. If it is executed in the gradual manner now described, children will not suffer in their health. But if, on the contrary, it is practised too hastily, e. g. if the number of the daily repasts are augmented at once by *two* instead of by *one*, and if the time to intervene until a new addition of food, is too short, sucklings cannot acquire the habit and will, of consequence, be liable to a severe bowel-complaint.

Among the sucklings of *white* descent in tropical countries, there are many who catch a *malign constipation*, *thrush*, *lientery*, *bilious diarrhoea* or *dysenteric affection* about the period of weaning. But most of these complaints are to be imputed to a hasty multiplication of the daily repasts, and to an indigestible or heating sort of food commonly selected. In order to amend such a mistake once made, and to prevent the distemper caused by it from turning to an incurable *atrophy*, there is no better expedient I found, than to continue giving suck again, *three* times a day, until the cutting of the *four eyeteeth*,

which commonly happens about the fifteenth month. To suckle so long but thrice within twenty four hours, without question, is performable even by lean mothers and nurses.

B. After-nutrication.

White tropical children should not obtain any meat, until they have had all the twenty milk-teeth!

The most perilous sickness of *white tropical children*, *two and three years old*, is *inflammation within the abdomen* (vd. P. I. Chap. 7. A. 4.). The best prophylactic against this is a regular and suitable diet to be pursued for two years after weaning. By this I mean *three* chief things to be observed, as:

- a) to confine children to fixed hours of eating;
- b) to prevent them from being surfeited;
- c) to prevent them from taking indigestible, heating and stimulant foods.

The *seven* daily repasts, due to children from the day of their leaving the mother's bosom, are to be continued for two or three months, then to be reduced to *six* somewhat larger, and a year after to *five* still larger. The *first* repast should take place between *five* and *seven* in the morning; the *last* between *six* and *eight* in the evening, the intermediate five being distributed to the fore and afternoon. As long, however, as a child newly weaned does not sleep throughout the

night, it may eat earlier in the morning and later in the evening by one hour. But from *nine* o' clock in the evening to *four* in the morning we should offer it nothing except drink.

The *first* and *last* repasts of tropical children should always be the lightest and most frugal, the *second* and *last but one* the largest. As to the rest, the quantity of food to be taken must depend on *age*, *complexion* and *habits*. Children three years old require to eat more at once, than those who are two years; children lean but healthy more than robust ones ^c); dark-coloured children more than light-coloured; children who have regular stools more, than costive ones; and those who frequently run about naked more, than those who are dressed and sedentary.

To provide for the *first* and *last* repasts, there should be chosen a teacup-ful of *thin biscuit*, *arrow-root*, *sago* or *rice-pap* (of pounded rice!) with an addition of some sugar and a little salt. If fresh and genuine *cow-milk* is to be had, it is preferable to pap in the morning. — To provide for the *second* and *last but one* repasts, *biscuit*- and *ricepap* mixed with a *yolk* or with some *thin broth* made of pullets or pigeons, previously deprived of its greasy parts, are to be

c) This will appear less strange, when I add, that the secretions and excretions of those tropical children, who are *lean*, are less torpid than of those who are robust.

recommended. To supply the other repasts of the day there should be alternately taken one or the other of the above paps, or a moderate portion of boiled *bananas* (*Musa paradisiaca* L.).

The torrid zone is blessed with innumerable fruits containing a pulp nutritive, easily digestible and savoury, small portions of which are allowable to new-weaned children, e. g. the *Amboina banana*, *West-Indian bacove* (*Musa sapientum* L.), *American annona* (*Annona muricata*), *East-Indian boa nona* (*Annona reticulata*), *Sirrikaya* (*Annona squamosa*) etc. But all these fruits should be fully ripe and kept for some days until used.

About the *end of the second* year children are permitted to eat some greens easy of digestion, e. g. boiled *carrots*, *spinage*, *potatoes*, *batatas* (*Convolvulus Batatas* L.), *ktelas* (*Plectranthus tuberosus* Bl.). — But *cabbage*, *peas*, *kidney-beans* and other greens of a fibrous and membranous texture cannot as yet be digested.

From the *end of the third* year, when the cutting of the twenty milk-teeth is commonly finished, *white* tropical children may be supposed to have passed the danger of abdominal inflammations, and need no more be nourished with such an anxious precaution as before. They now are free to share in most of the dishes served up, with the exception of such as are hot-spiced, very hard and very greasy, e. g. *pies*, *pepper-kerri*, *battered bread*, *cheese*, *Bologne sausage* etc. The

number of repasts may now be reduced from *five* to *four* a day. For the *first* and *last* let there be chosen a plateful of rice-pap or white bread soaked with good milk; for the *second* and *third*, a portion of the usual family breakfast and dinner, composed of: *kerri* (slightly spiced), *soup*, *rice*, *yams*, *cassavi*, *potatoes*, *greens*, *fruits*, *eggs* (soft-boiled), *fresh fish*, *young poultry* (minced and fried), *lean pork* (roasted) etc. The quantity of *fish* and *meat* to be allowed as yet should not be too considerable, not from their being too indigestible, but because they favour the exciting influence of atmospherical heat. Opposed to the latter are ripe and cooling *fruits*, one reason why children are allowed to finish their breakfast and dinner with a moderate portion of wholesome fruits or to take them betwixt meals.

Beverage for little children in hot countries.

As soon as sucklings begin to eat twice or thrice a day, the suck afforded them is no longer sufficient to quench their thirst, and thus they want to take some drink, which should be presented to them so much the oftener in proportion to the consistence of their food. The most wholesome drinks for tropical sucklings, *six* months old, as far as I could observe, are: *pure cold water*; *cold sugar-water*; a *dilute infusion of tea*, cold and without milk; an infusion of the leaves

of *Abrus precatorius* L. (Malay: *daun saga*), cold. To children, who have passed two years, I recommend also: the water of almost ripe *cocoanuts*, *lemonade* and *sherbets*. Among the drinks the most unsuited for tropical children are: *coffee*, *beer*, *wine* and *liqueurs*. Unspiced *chocolate*, which is rather a food than beverage, is less obnoxious.

Second Book.

The results of my twelve year's practice in Java
respecting the diseases of children.

Introduction.

Clinical rules to be observed in infantile diseases of hot countries.

Before I begin to detail my practical observations on infantile diseases occurring in the island of Java, I will offer a few suggestions to European physicians between the tropics, who aspire after the reputation of being skilful in treating sick children.

First suggestion.

The peculiar course of tropical diseases should be regarded!

Acute diseases, especially *internal inflammations* of infantile life, run their course quicker, their stages are shorter, and their termination, prosperous as well as fatal, is much more sudden within the hot than temperate zone, — whence I derive two maxims to be observed by medical practitioners :

1) To resist, if possible, the first beginning of

any acute disease with such remedies as will prevent *internal* inflammation, or break its vehemence, if already extant.

2) To promote in due time *salutary secretions*.

— Acute diseases between the tropics never come to a favourable termination without loose and copious *bilious stools* and a *general perspiration* over the whole frame. In cases of internal inflammation, *furuncles* and *cutaneous abscesses* prove salutary, as also, though more rarely, *bloody fluxes from the hemorrhoidal vessels*. — Catarrhal affections require, moreover, a *mucous expectoration* or *efflux from the nose*.

Second suggestion.

The influence of the rainy season should be considered!

To estimate truly this influence we must not forget, that it is modified by: *age, lodging, nature of the ground, winds* and other local circumstances. Atmospheric moisture and coolness during the rainy season are less hurtful to mid-age than tender and old age. The stagnant moisture of the ground during that season is a source of sickness more frequently occurring among the black natives than Europeans, not that the former are more susceptible of it (vd. B. I. P. I. Chap. 1. c. 1.), but more liable to it within their low cottages and from their habit of sleeping upon

the ground. The above is confirmed by an observation on the mortality among the inhabitants of *Batavia*, communicated to us by the Count *Hogendorp*, lately Resident of that place. This nobleman has found from calculations, that *one* out of *sixteen* die annually; that the mortality during the rainy season is proportionally greater among old men and children under seven years, chiefly of Indian descent; and on the contrary, that the mortality during the dry season is more considerable among middle-aged men ^a).

Near tropical coasts it frequently happens, that diseases become worse with the beginning of the rainy season, e. g. the *yellow fever*, the *Batavian fever*, the *Bengal fever*, the *dysentery* etc. But there are instances also to show, that such a deterioration can take place even in the dry season, if favoured by a particular situation of forests, mountains, marshes, ricefields etc. With such and other topical circumstances every physician, who goes to a tropical country, should endeavour to become acquainted as soon as possible, because they are of no less importance to a true understanding and due treatment of tropical diseases in general, than in particular of those incidental to children.

a) C. S. W. *Grave van Hogendorp* beschouwing der Nederlandsche Bezittingen in Oostindie (translated from the French into the Dutch by I. *Olivier*); bl. 384.

Third suggestion.

Medicines should be adapted to climate!

Among the medicines admitted into European dispensaries there are many articles quite useless to medical practice between the tropics, as, on the one hand, they soon lose their efficacy if sent thither, and on the other, they can be easily substituted by indigenous medicines much more fresh and efficacious. To this class belong:

- 1) The *aromatic* and *narcotic herbs* and *flowers*, as: herba menthae, origani, serpylli, hyoscyami, cicutae, digitalis, flores lavandulae, arnicae, sambuci etc.
- 2) The *watery extracts*, as: extractum hyoscyami, belladonnae, cicutae, valerianae etc.
- 3) Most *sirups* prepared in Europe, especially the *oxymella*, e. g. oxymel scillae, which I have ever found inefficacious in Java.
- 4) Many *seeds* usual for emulsions, e. g. *almonds*, which soon become rancid and the preparations of which can be well supplied by fresh *cocoa-milk* and *cocoa-oil* newly cleared by boiling.

Manna is likewise to be placed in the list of superfluous articles, and might be better substituted by *palm-sugar* („goola areng“ in Java), less favouring infantile disposition to flatulency.

Some of the medicines, most in use against infantile diseases in Europe, are very likely to

prove hurtful in hot climates, and should thus be avoided as much as possible. Such are *emetics*, not unfrequently followed by a severe reaction of the stomach; further more *rhubarb* and *sulphur*, too exciting to the system of the vena portarum and consequently to be dreaded during the cutting of milk-teeth.

Fourth suggestion.

The character and habits of mothers should be considered!

For practice among children, tropical mothers can be reduced to four classes as: *European, Creole, mongrel* and *genuine black*.

The *first* confide most in European physicians and, in general, most punctually obey their precepts. They require, however, to be frequently exhorted to provide a *cooler dress* for sick children and a *fresh air* for the sick room, two requisites of great importance to many tropical diseases.

Among *Creole* mothers there are many, who commit a sick child to the hands of a black maid-servant or slave, who neglects one half of the physician's orders and executes the other in a wrong manner. Under such circumstances he should not be deterred by a false shame from performing, himself, many operations which admit of no delay, lest the favourable moment pass by neglected, e. g. applying leeches, cold affusion,

clysters etc. In critical cases he should see the little patient three or four times a day and at least once in the night, if he will be certain, that neither his medicinal nor dietetical precepts are neglected, particularly as regards the food. Before leaving, he should repeatedly desire the child's stools to be kept until his return, otherwise the black nursemaid will forget it and deprive him of a most important means to make a correct diagnosis and prognosis.

At the houses of *mongrel* mothers the physician will meet with still greater obstacles. For they leave not only the same work to him as the servants of Creole mothers, but even fancy themselves better informed on many things than he himself is and are, moreover, fond of injuring his reputation. Whenever they send for him at the beginning of a disease, he may expect that they will have recourse to secret quackery, unless the patient is somewhat recovered in a day or two; and if towards the later period of a disease, he may be sure that they already have tried various kinds of indigenous medicines, even though they swear by earth and heaven, that they have not. To oppose such mothers it will be prudent for a young physician to adopt the three following maxims:

- 1) Never to prescribe any medicine (unless there be *periculum in mora*), until he knows, whether he has to do with a disease but now

commencing or already several days old. To get enlightened on this point, it will be necessary to have seen the patient three or four different times.

- 2) Never to promise a favourable event but upon conditions, — such cases excepted as are deemed free from the least danger.
- 3) Never to be jealous of the landbred quacks, but to converse in a friendly way with them, in order to get acquainted with their medicines and practices, and thus for the future be better armed against private quackery.

It is but seldom, that a European physician is consulted by *genuine black* mothers, partly because they are unable to pay the expenses, and partly, because they have no great opinion of European methods of curing. What they least conceive, is: how a sick child should be desired to take no solid food for some days, in order to get the sooner out of danger. According to their limited understanding, this measure can but lead to debility and the grave. It would be a vain, nay a foolish attempt to endeavour to convince them by means of demonstration, — in their mind they would but laugh at it. For diet, they should only be requested to dilute somewhat more the food of a sick child, and to prolong the interval of its repasts somewhat more, than they are accustomed.

Fifth suggestion.

Attention should be paid to the breasts of black wet-nurses!

Tropical wet-nurses not unfrequently lose their milk, before the white or mongrel child suckled by them is fit for weaning. In order to conceal this want of milk and to prevent their dismissal as long as possible, they present their bosom sparingly, and privately satiate the child with coarse food. By so doing they frequently attain their aim in deceiving the mother for a while, but seldom indeed without hurting the suckling, who under such circumstances will fall into an *atrophic* state, incurable by the physician unless he knows the origin. — The above shows the necessity on the part of the physician to examine often and attentively the breasts of a black nurse, whose suckling is distempered, and to insist upon her being changed, before it be too late, in case he should detect her lacteal secretion to be scanty. For, if he neglect this precaution and the child should die, he may be certain that people will not accuse the nurse but himself.

Sixth suggestion.

A child's descent should be considered!

The offspring of *white* parents in hot climates, especially those, who exhibit a *flushed face*

and *plethoric frame*, become oftener sick than the children of *yellow, brown and black* parents; the diseases of the former are in general more *inflammatory*, than those of the latter. Hence a threefold conclusion is to be drawn for medical practice within the tropics, as:

- 1) That *antiphlogistic* and *evacuant* medicines, proportionally, will be more beneficial to *white* than *dark-coloured* children.
- 2) That *stimulants* and *tonics*, proportionally, will be less hurtful to the latter than former.
- 3) That a *circumspect* *prognostication* will seldom be quite useless in case of being consulted for a *red-faced* child of the white race.

Seventh suggestion.

A child's age should be considered!

The *first dentition* or cutting of milk-teeth seems to be the most dangerous period of life in hot countries, as a considerable number die of *convulsions*, when first entering into that stage, and a still greater of *abdominal inflammation*, before having past it. Such must influence the physician, not to think light of any disease, which happens in the said period, and to rely most on a *demulcent* and *antiphlogistic* treatment during it.

I will now turn to a detailed account of my pathological cases occurring among children during my twelve years stay in Java. This account will be divided into four Sections. The *first* Section will comprehend the morbid conditions I met with *before* the cutting of milk-teeth; the *second*, the morbid conditions I observed most frequently *during* the cutting of milk-teeth; the *third*, the morbid conditions *after* the cutting of milk-teeth; and the *fourth*, those which I observed more seldom in childhood than in full age.

F i r s t S e c t i o n .

Morbid conditions met with before the cutting of milk-teeth.

A. Congenital defects.

1. Hare-lip (labium leporinum).

Though this deformity frequently occurs among the races settled in Java, I had but *two* opportunities of operating on it, once myself alone, another time in company with Dr. *Heymanns*. Both operations were successful and took place on mongrel children, three and four months old. The one instance was a simple hare-lip, the other complicated with a cartilaginous excrescence at the border of the upper jaw, which I took off with a pair of cutting pincers immediately before performing the chief acts of the operation. It deserves to be noted, that the lips of the wound united so quickly, as to allow me to draw out the upper pin on the morning following, and the lower a day after. I thought it necessary, for fear the pinpricks might be too much disposed to supuration by the influence of tropical heat. The sticking plaister put over it remained until the fourth day after the operation.

2. *Tied tongue (ancyloglossum).*

Thrice I have seen new-born children hindered from sucking by a *frenulum linguae* too narrow or affixed too much forward. One of those children was a mongrel, the other two Creoles. The obstacle was easily removed by an incision with a pair of blunt-pointed scissars, and caused no great loss of blood.

3. *Groin-rupture (hernia inguinalis).*

Twice I met a Creole babe with a groin-rupture, which soon took the form of a *scrotal* rupture. The reduction of both the ruptures was easy. I endeavoured to check them by a truss of bombasin, provided with a ball of lint and from time to time changed. Its effect was supported by a strong decoction of the astringent peel of *mangostans*, applied externally. A while after I recommended an elastic truss with thigh-strings, to be procured in duplo. But since it caused much loss of time to get this bandage sent from Europe, and both the little ones were removed elsewhere soon after, I cannot tell, whether or not they have eventually been perfectly cured.

4. *Imperforation of the fundament (cloaca).*

In the last year of my residence in Samarang I was called by a Chinese, whose wife, a mongrel Chinese, had been delivered some days

previously of a girl with an imperforate anus and who voided excrements together with urine from the vagina. An operation was not practicable, as there could not be detected any trace either of the *rectum* or of the *os coccygis*, and consequently it might be presumed, that the latter bent forwards too far above. The aperture of the rectum communicating with the vagina appeared to be pretty large, since the little one was not at all subject to constipation, though she took every day, besides suck, several portions of rice-pap with bananas, and remained in good health until the eighth month, when I saw her the last time.

5. Club-feet (*talipedes*).

I treated *five* children, who were club-footed, all descended from European parents. They exhibited the upper margin of the feet turned outwards, the exterior downwards and the sole inwards. They recovered within eighteen months or two years, by the known bandage of Dr. *Brückner* which consists of a folded handkerchief, about an ell long, to be rolled round the foot with oblique turns. Its effect was supported by tepid footbaths, emollient *oily* rubbings on the stretched side, and *aromatic* or *spirituous* friction on the slackened side of the feet, to which I added some daily efforts to bring the foot to its natural posture, by bending it with my hand. — Perhaps an application of sticking plaister-stripes put on in

a *spiral* manner, which has been lately recommended for curing club-feet, might have been preferable to the above bandage.

6. *Naeves (naevi).*

The hypothetical opinion, that naeves are caused by the woman being frightened during pregnancy, has been propagated by European mothers in India to Creole and mongrel ones. — Knowing an instance that *caustic*, applied by a quack to a purple naeve on the face, proved fatal to a new-born Creole girl, I cannot but warn against such an application, instead of which an inoculation of cow-pox, applied around the naeve, should be tried against those naeves, which can neither be extirpated by cutting, nor ligature.

B. Accidents occurring at or some days after birth.

7. *Premature birth (partus praematurus).*

Debility by premature birth is less an object of medicinal than dietetical treatment. I have mentioned it only with a view to observe, that it sooner disappears and less endangers life in hot than in cold climates, a fact of which I was convinced by an instance of twins, who retained life, though extremely weak and stamped with every mark of being premature at the moment of birth.

It is a curious superstition spread throughout

Java, that a foetus seven months old, or a *seven months child*, is less likely to die than a foetus eight months old. I need hardly state, that this superstition is to be imputed solely to chronological mistakes about the period of pregnancy.

8. *Suspended animation (asphyxia).*

I happened frequently in Java to be consulted for a full-grown and well-formed foetus born in a state of suspended animation, for which reason I shall speak more at large on this subject.

Suspended animation of children just born, or *native asphyxia*, is to be distinguished into two kinds, as: *syncope* or apparent death by weakness, and a *suffocative* or apparent death by choking. The latter is also called *apoplexia neonatorum*.

The diagnostics of the *former* are: a weak appearance, pale and withered skin, shrunk features, hanging jaw, open fundament, cold extremities, absent or feeble pulsation of the umbilical arteries; those of the *latter*: a robust appearance, livid or darkish complexion, red prominent eyes, strong pulsation of the navel-arteries, less sunken vital warmth. — The common causes of the *former* are: frequent indisposition and loss of blood on the part of the mother during pregnancy, laceration of the umbilical cord during birth, delivering by turning; those of the *latter*: drastic medicines taken before birth, a protracted and

difficult delivery, violent pressure of the infant's head or cord, extreme shortness of the cord, strangulation by the cord being round the neck, occlusion of the infant's mouth and nostrils by mucous or membranaceous substance.

The *suffocative* asphyxia seems to be the most frequent in Java, less however in consequence of a difficult and protracted delivery (for births are generally there both easy and speedy) than of abused drastics, rude manipulations of the land-bred midwives and superstitious habits. Two of the latter may be mentioned here. The one is: that Javanese husbands in cases of difficulty tread on the belly of their wives in labour and trample with all their power, to accelerate delivery. The other is: that Javanese midwives always put a constraining bandage around the epigastric region of women in labour with a view to promote delivery and prevent ascension (!) of the womb. This ridiculous habit breeds much mischief, particularly at places destitute of a European midwife. The common consequences of it are suffocation of the foetus and severe prolapsion of the womb. Removal of the above bandage should therefore be always the first act of a physician called to assist women in labour.

Treatment of the syncopic asphyxia.

When the umbilical cord is torn, a ligature should be applied without delay. An effort must

be made to blow air into the child's lungs, while it is put (indifferently, whether the secundines are present or no) in a warm bath mingled with some wine, arrack, vinegar or any aromatic infusion. In the mean time its feet and ribs should be softly brushed; its nose tickled with a feather dipped in vinegar or onion-sap; a clyster employed of tepid camomile-tea with some salt; some gentle electric or galvanic shocks imparted to the spine (if there is at hand a machine) etc. As soon now as the child commences to respire, it must be taken from the bath and placed on the mother's bosom. But should it again become dyspnoic, it would be recommendable to repeat the warm bath, and instil into the mouth a drop of *peppermint-oil* or *aether sulphuricus alcoholicus*. Should this even be of no use, let an emetic be tried, e. g. a teaspoon-ful of *oxymel scillae* or a drop of *vinum antimonii*.

Treatment of the suffocative asphyxia.

The umbilical cord strangling the infant, by being round its neck and being too short, is to be cut through as soon as possible; one or two tablespoon-fuls of blood is to be allowed to flow from it, before it is secured with a ligature; the mouth and nostrils are to be cleared of adherent substance; a warm bath is to be next employed; a stream of *cold water* is to be injected on the child's head and breast, while it is in the bath,

and at the same time an effort must be made to inflate the lungs. Should it happen, that this treatment has not the least effect, either on the heart or lungs, and the child's skin become paler, we must recur to the remedies recommended against *syncopic asphyxia*.

9. Swollen head (*caput succedaneum*).

This intumescence, which is produced by pressure on the child's head or face during birth, never happened to be an object of my medical practice in Java, as it always disappeared of its own accord within a few days. In case of its being exceedingly large and continuing long, tepid aromatic fomentation might be recommendable.

10. Swollen head by extravasation of blood (*cephalaematoma*).

Of more importance, than the common swollen head of new-born children, is an intumescence produced by extravasation of blood under or between the external integuments of the scull. Laceration of some bloodvessel during birth is said to be its primitive cause. It usually appears a few days after birth. It is distinguished from the common swollen head by *fluctuation* and by being more circumscribed, sometimes appearing of a bluish colour. It will not be confounded with a brain-rupture, as it does not sink down, nor produce a comatose state, when pressed with the

hand. In case of a large extent it allows no hope of a resolution, but must be timely opened with a lancet for fear of *caries*, afterwards fomented with aromatics and provided with a compressing bandage. The opening must be made at the most pending point of the tumour and kept by a plug of lint, until the extravasation has been duly evacuated.

Thus I succeeded to cure the only instance of *cephalaematoma*, with which I met in Java on a Malay child. The intumescence covered the whole crown of the head and descended to the squamous portion of the right temporal bone. The opening, which was made the fourth day after birth, voided a great quantity of thick dark blood, but required to be once more renewed from its having closed too early.

11. *Scull-bones lapping over.*

Scull-bones slightly lapping the one over the other is a common appearance in every child-birth and need not be interfered with. Passingly lapping over, however, they may, when complicated with a *cephalaematoma* or swollen head of an unusual size. I saw scull-bones, after protracted and difficult births in Java, lap over to such a degree, that the head of the new-born child kept a conspicuous oval form throughout several weeks, but afterwards lost it again. Once, however, I observed that a violent pressure of the

child's head, where the buttocks had first presented themselves, proved injurious to the display of the mental faculties.

12. *Fracture.*

Luxation of bones at birth never occurred to me in Java, a fracture but *once*. The patient was a mongrel European child, whose arm had been broken by the wrong manipulation of a Javanese midwife assisting at birth. The people sent for me a day having elapsed after the birth. Notwithstanding a vigilant attendance enabled me to cure the fracture within sixteen days, by means of card-splints and a roller. The splints were moistened with brandy previous to their being applied. I was twice obliged to take them off, in order to put them on looser.

By the way I, once for all, wish to admonish those surgeons, who have lately arrived within tropical countries, not to apply superfluous bandages nor put splints, compresses and bandages too closely on in cases of fractures, luxations and complicated wounds. This admonition concerns not only the infantile but subsequent periods of life. For, a continually hot atmosphere is such a stimulus to peripheral lymphatics and blood-vessels, as to turn very easily to an intense inflammation and after-mortification any wounded part, which is dressed with constraining and heating bandages.

13. Slight wounds by the forceps.

I will not conceal, that *four* of the children I extracted with the forceps in Java, showed their face and head slightly wounded, nor am I inclined to examine, whether these injuries were to be imputed to my want of skill, or to a bad condition of the instrument (which had been corroded by rust and could not be changed for a better during some years). In a word, such existed, but healed within a few days without either being dressed or leaving visible scars. Their healing I promoted only by an ablution of diluted wine and some precaution against their being pressed or scraped.

14. Swollen breasts.

In Europe, we know, that children are not unfrequently born with swollen breasts, containing a wheyey liquid and even turning to a painful inflammation and suppuration, if a violent effort is made to press out the liquid, which is contained within them. For such a complaint I was but *once* consulted in Java, the little patient being a Creole, from whose painful and tumid breasts issued a drop of milky matter, when softly pressed with my fingers. I got both the breasts covered with a wadding of cotton, which kept them equally warm and free from being pressed.

Eight days had thus passed, before all traces of the inflammation were lost.

15. *Bleeding at the navel (omphalorrhagia).*

New-born children of *white* parents frequently lose blood from the navel within the tropics (vd. B. I. P. I. Chapt. 7. A. 4. et P. II. Chapt. 1.). — The number of those, to whom I saw it happen in Java, was about *twenty six*. — *Two* lost a considerable quantity of blood the first day after birth, for want of a proper ligature on the cord. The circumstance might have proved fatal, had not the people immediately sent for me. — *Eight* lost a less quantity of blood, the second day after birth, because the double ligature put on the cord had slackened by its shrinking and did not, of course, sufficiently shut up the umbilical arteries. — *Two* bled on the third and fourth day after birth, though little, because their cord, as yet cohering with the belly by a thin thread, had been pulled up and down by a displaced navelband. I cut the thread, strewed some powder of dragon's blood (*sanguis draconis*; Malay: *menyan mera*) on the navel and covered it with lint, compress and bandage. — *Five* had a bloody excretion from the navel after the cord had dropped, but ailed in nothing else. I only caused their navels to be daily washed with cold water and red wine and dressed with dry lint. — *Nine*, plethoric and robust ones, relapsed into this bloody umbilical excretion between the fifth and eighth week of life, but were not at all dis-

tempered. I considered it as salutary and only recommended frequent bathing in cold water.

16. *Navel-gleet.*

In one hundred and ninety two births directed by me, I managed the navelcord myself 119 times, and 73 times it was managed by a landbred midwife. The 119 cords committed to my care belonged partly to genuine, partly to mongrel white infants, and were treated as has been reported in the second Part of the First Book (chap. 1.). *Eleven* cords, particularly thick, when they had dropped off, left a kind of umbilical gleet neither preceded by, nor attended with visible inflammation. The purulent flux continued from eight to ten days, but was of no moment, and stopt ten times in eleven by the application of powdered *benzoin* (Malay: *menyan poote*). Once it continued until the fourth week of life, attended with a small fleshy excrescence within the navel and a painful sensation of the belly. The excrescence disappeared on being twice touched with *lapis infernalis*, the navel closed afterwards and the child did well.

Javanese midwives do not heed the cord, until the secundines are expelled. If the latter be retained above two hours from the child's birth, they will then anxiously look for European assistance. But with the appearing of the secundines they begin their practice: bathing the child; stri-

king the upper end of the cord with a bamboo-knife, to press downwards the coagulated blood, then cutting it through about three inches distance from the belly. If the new-born little one is a European, they tie the cord, if otherwise, they do not. The remainder of the divided cord they cover with a poultice, prepared of fresh *curcuma* (Malay: *konyet*), salt and powder of *burned cocoa-nutshell*. This poultice, enclosed with a *siri* or *betleleaf* and fastened with a bandage, is left until the cord drops, which generally happens about the fourth day from birth. — New-born children of Javanese or Malay descent, thus managed, never became liable to bloody and purulent excretion from the navel, as far as I could observe; whereas I knew two new-born Creoles treated in the same manner, who caught the fourth day after birth an umbilical ulceration small and painful, soon healing, however, by the application of a drop of tepid oil, dry lint and daily bathing in luke-warm water.

17. Navel-rupture (hernia umbilicalis).

I met upon the whole in Java *nine* instances of infantile navel-rupture: *one* of a mongrel child dead-born; *five* of Javanese children, already able to walk; *three* of Creole babes subjected to my treatment in the second month. The latter dated their complaint from a few weeks after birth, as the mothers told me, and owed it in my opinion to

a rude and negligent treatment of the navel-cord. The largest of the ruptures had a diameter of about an inch and a quarter, and required seven months compression before cured. For this purpose I availed myself of a hemispherical piece of cork infused in red wine for a day, and fastened on the rupture by a stripe of sticking plaister of two fingers breadth, rolled round the belly. Above I put a compress of lint moistened with some astringent decoction and surrounded with a well-adapted navelband, which I ordered to be separately worn for a considerable period after the rupture had disappeared. The above was daily renewed after bathing, while the child took the breast in a backward position.

18. *Jaundice (icterus).*

Jaundice of new-born children, I believe, is more to be considered as a physiological than pathological matter. I beg to refer to my remarks on it concerning descent, in the First Book (P. I. Chap. 1. b. 3.). —

Observation has taught me, that *white* infants get indisposed much more easily than *coloured* ones during the first four weeks of life, the common period of jaundice. But this is not to be feared, unless they take some other food than suck immediately after birth. If so doing they are less promptly purged of the *meconium*, become costive and peevish, have greenish or darkish

stools and advance but little in growth. Physicians, who are consulted in such cases, cannot do better than act against biliary and intestinal oppletion, for which purpose I recommend: *aperient clysters* of tepid water, cocoa-oil and sugar; some teaspoonfuls of *rhubarb-sirup*, mingled with *fennel-water* and *magnesia*; a tepid bath once or twice a day; repeated short excursions in the *open air* within a covered baby's carriage. Besides, they should insist on the child's food being restricted to mere suck for a time, as otherwise they cannot answer for its returning every moment into its former uneasiness and at length catching a perilous disease.

19. *Chafing (intertrigo, erythema etc.).*

Chafing or sore skin, an incident most frequent in the period of *cuticular exfoliation* (vd. B. I. P. I. Chap. 1. b. 1,) to children in temperate climates, occurred but rarely in my practice in Java and only among *white* infants, yet never of any great importance, and always at such places, as come frequently in contact with infantile excrements, e. g. the scrotum, privy lips, abdomen and buttocks. Not once did I perceive it at the armpit or behind the ears. To prevent it, tropical infants must be often washed, cold bathed and thinly clothed; to be cured of it, the sore parts must be smeared with fresh *cocoa-milk* or sprinkled with *riceflour* (Malay: *bedak*) or *vegetable sulphur (lycopodium)*.

20. *Want of urinary excretion (anuria).*

But twice was I consulted in Java by mothers, who were apprehensive because their little ones had not voided urine the first day after birth. One of these was a European, the other a Creole woman, neither capable of having suckled her child for want of lacteal secretion. This led me to think, that the *renal* function of the little ones had not as yet commenced, and I accordingly composed the minds of the mothers without prescribing medicine. When I called on the following day, I was informed that both the infants had made water, the one about 36, the other 48 hours from the moment of birth.

C. **Accidents occurring some weeks or months after birth.**

21. *Costiveness.*

As soon as little children within the hot zone become costive, it is to be feared that they will become severely ill, particularly if they belong to a white race (vd. B. I. P. I. Chap. 8. 5,) and have a plethoric frame. I knew babes in Java from their second or third month subject to such a degree of constipation, that they hardly once in twenty four hours had passage, unless having

had a suppository ^{b)}. The mothers, who engaged me as their family physician, in the beginning found little difficulty in persuading me to a periodical purgation of such babes, — for which purpose I chose some rhubarb-sirup with manna or tartrate of potash, or instead of these a teaspoon-ful of castor-oil. In later times, however, I was convinced, that the costiveness of young sucklings, who have discharged their meconium without difficulty, is always occasioned by improper food, such as a clammy rice-pap, and a frequent purgation increases this morbid disposition instead of improving it. Since that period I have confined my medicinal prescription to *aperient clysters*, composed of tepid water, cocoa-oil and some salt, while I earnestly exhorted the mothers to nourish the babe with mere suck for one or two months. Prudent mothers, who obeyed my advice, had the delight of seeing their babes gradually recover regular and spontaneous discharges, whereas imprudent mothers, who are of opinion that new-born little ones cannot subsist on suck, generally had the pain of seeing their sucklings

b) Mongrel European mothers in Java are wont to apply a rolled up oiled *siri* or *bettle*-leaf as a suppository, in order to open the bowels of a costive infant. European mothers there take a piece of honied soap for that purpose. Both applications are to be reprobated, because they increase costiveness and dispose to inflammation of the *rectum*.

frequently become indisposed and, when near dentition, affected with a dangerous disease of the bowels.

22. Colic.

The signs which indicate, that a suckling is afflicted with colic, shall be past in silence, as it must be presumed, that every physician knows them. — The sucklings I had to attend for this suffering in my Java practice, were mostly *white* and *mongrel*. Some of these had been too early allowed to eat; others had an ulcerated navel; others had been too warmly dressed and too seldom exposed to the open air; and others had taken a milk corrupted by debauchery of mothers (e. g. too early dancing and banqueting). These causes and the concomitant symptoms modified my medicinal treatment. In case of a bad diet on the part of the sucking child or lactant mother, I insisted upon its being corrected. In case of the mothers milk being thus injured, I recommended a wet-nurse, and caused the child to be artificially nursed for a while. Cases of umbilical ulceration I endeavoured to heal (vd. No. 16 above). In cases of constipation or a flatulent puffing up of the belly, I recommended: *aperient clysters*; friction of the belly with *tepid cocoa-oil*, impregnated with some drops of peppermint or fennel-oil; *warm poultices* on the belly etc. When colic was attended with *diarrhoea*, I treated the

latter according to the differences to be mentioned below (No. 24.). In any case of a painful affection of the babe's belly, I forbade cold bathing or desired it to be exchanged for tepid bathing, until the little patient was again well.

23. Vomiting.

Eructation of new-born children, or their spitting of suck, is not to be confounded with actual *vomiting*. The former is common to almost every child, whose mother's or nurse's breasts abound with milk. The latter is a morbid symptom never to be considered as trifling in hot climates. The general precepts to be instantly obeyed, whenever we meet with it, are these.

- 1) To put away the cause occasioning the vomiting.
- 2) To allow very little suck or food to be taken at once.
- 3) To abstain from internal medicines which generally make the patient worse. Some sorts of *emulsion* fresh-prepared, however, make an exception, e. g. *fresh cocoa-milk*, a teaspoon-ful of which may be administered four or five times a day in particular cases, in order to mitigate an excessive sensibility of the stomach.
- 4) To procure sufficient stools by the employment of clysters.
- 5) To substitute tepid for cold bathing.

The *occasional causes*, which I saw in Java produce vomiting in new-born sucklings, are reducible to *seven*, as:

- a) Suck poisoned by *emmenagogues*, taken in childbed.
 - b) Suck corrupted by a fretful and choleric temper of the mother.
 - c) Suck corrupted by a debauched life of the mother.
 - d) Suck vitiated by return of the courses.
 - e) Overeating
 - f) Thrush neglected
 - g) Medicines abused
- } on the part of sucklings.

A poisoning of suck by the use of *emmenagogues* occurred only in *white* mothers (vd. B. I. P. II. Chap. 6. A. 3.). Infants hence vomiting will die, if they keep the mother's bosom, but mostly recover if in time removed from it. Two cases may corroborate this.

Mrs. S., a Creole lady, at her first and second in-lying took an emmenagogue potion, prepared of the ingredients specified in the First Book (l. c.). Her two little babes were perfectly well until the fourth or fifth day after birth, but from that moment always vomited when suckled, and as they kept the breasts, their sickness increased and reduced them to such a state of weakness, that they could suck no more. One of them expired in the fourth, the other in the sixth week of life. — At her third confinement

Mrs. S. abstained from the above potion and had the pleasure of seeing her child spared from vomiting.

Mrs. L., a European woman, took a similar potion at four successive childbirths. One or two days afterwards she always fell into a severe nervous affection, and her four babes, who till then were quite well, fell ill and began to vomit. They did not expire, however, as the mother by losing her milk was obliged to engage a wet-nurse. — At her fifth confinement Mrs. L. was persuaded by me to lay aside the above potion, the result of which was, that both, she and her child, remained in good health. —

When little children vomit because of a fretful and choleric temper of the mother (as is often the case with Creole mothers in tropical countries), they should without delay be removed from the mother's bosom, or otherwise they will be in danger of falling into lethal *convulsions* (vd. N. 27. infra). The same measure is requisite, when the child's vomiting is to be imputed to a debauched life of the mother (e. g. when the latter is passionately fond of dancing and banqueting), unless the physician's earnest admonition induce her to obey a stricter regimen, a circumstance, however, which is not to be trusted to.

By the return of the monthly courses I saw only one case of a child vomiting, — it was of

European descent and suckled by a Javanese nurse. The affection passed away, however, a few days after it occurred, without there being any necessity to change the nurse.

When babes vomit from surfeiting the stomach, they must be restricted to mere suck for a time, otherwise they are likely to catch *thrush* or a fatal *gastritis* in hot climates.

When a babe's vomiting is the consequence of *thrush* or any illness long treated with internal medicines, in hot climates, we may suppose the case hopeless and death the only alternative.

24. *Diarrhoea.*

No morbid appearance in sucking children of Java has so frequently fallen under my observation, as *diarrhoea*. — To judge better of this disease in respect to hot climates, we should distinguish *six* varieties of infantile diarrhoea more or less related to one another. They are:

- a) *bilious* diarrhoea;
- b) *acid* diarrhoea;
- c) *lientery*;
- d) *bloody* diarrhoea;
- e) diarrhoea *symptomatic of thrush*;
- f) *paralytic* diarrhoea.

Diagnosis.

The marks distinctive of *bilious* diarrhoea are: stools anomalous, viscid, dark-green or dun

coloured, spreading a specific smell of bile, whether attended with colic or not; those of *acid* diarrhoea: stools anomalous, light-green, smelling sour, containing visible remnants of indigested suck, attended with colic and redness of the anus; those of *lientery*: stools anomalous, whitish, more or less rancid, mixed with indigested aliments, attended with uneasiness of the belly; those of *bloody* diarrhoea: stools loose and bloody, attended with general distemper more or less important; those of diarrhoea symptomatic of *thrush*: stools liquid, whitish or yellowish, containing little pieces of films, attended with some tenesmus; those of *paralytic* diarrhoea: stools abundant, bursting forth on a sudden, brown coloured, most fetid, attended with the known symptoms of debility and colliquation after having been long sick.

Causes.

My etiologic inquiry about infantile diarrhoea of tropical climates has taught me, that this disease, indifferent as to what form, is much more frequently the result of copious eating, than bad suck and oppressed perspiration; its difference in form, nevertheless, depends much on native complexion and quality of food. If an inference from the majority of cases be permitted, white sucklings are, in general, more predisposed to *bilious*, *acid* and *bloody* diarrhoea than black ones, whereas the predisposition to *lientery* and

thrush is in my opinion equal to both. Fermenting aliments (as: honey, white bread with milk and sugar, bananas with rice, pap of arrowroot kept for a day etc.), are more favourable to *thrush*, *lientery* and *acid* diarrhoea; hard, indigestible and heating aliments (as: a clammy rice-pap, spicy broths etc.), on the contrary, more inducing to *bilious* and *bloody* diarrhoea, particularly of sucklings who are costive. — *Paralytic* diarrhoea is a most common harbinger of death in tropical climates, chiefly in infancy and after the abuse of purgatives.

Treatment.

The practice applicable to diarrhoea of tropical sucklings implies *general* and *special* precepts.

General precepts are:

- 1) To nourish the babe with mere suck, if possible. But if any other food is necessary, it should only be offered to it in very small portions and that not too often.
- 2) To bring the babe frequently into the open air. For, its being shut in a hot room will aggravate the disease and retard the convalescence.
- 3) To suspend the cold bath until the recovery of health.
- 4) To abstain from internal *astringents* and *bitters* of whatsoever kind. For, such medicines are likely to convert a diarrhoea, in-

cident to a sucking child in hot climates, to an incurable *enteritis*.

Special precepts depend on the form of diarrhoea.

Bilious diarrhoea often proves a salutary phenomenon in hot climates, as nature either prevents or cures in this way a hepatic, intestinal or cerebral inflammation etc. It should therefore never be hastily stopped. If bilious stools are copious, unattended with colic or tenesmus, concurring with a general perspiration and at the same time appear to relieve the sick child, we cannot do better than abstain from the use of medicines. But if stools are scanty and painful, though numerous, and tinged with a clammy bile: a tepid *clyster* or a grain of *calomel* divided into three or four doses, or a mixture of *gum* and *castor-oil* taken in teaspoonful doses (vd. form. 1. of the Appendix) will be useful.

Acid or *light-green* diarrhoea occurred more among debile and lean than vigorous and robust sucklings, neither could the former be so promptly cured as the latter, a circumstance, which shows the necessity of imposing a stricter regimen on the former than on the latter. In cases of scanty, but numerous light-green stools: I found, that a composition of *gum*, *fennel* or *orangepeel-water* and some *castor-oil* was useful (vd. form. 1. of the Appendix); in case of contemporary gripes: a drop of *laudanum* added to it; in case of ex-

cessive stools: one grain of *lapis calaminaris* reduced to a very fine powder or two grains of *white bolus*, both taken once or twice a day, and besides a teaspoon-ful of *gummed fennel* or *orange-peel-water*, combined with a drop of *laudanum* according to circumstances, four or five times a day. — Of the food, which I tried against acid diarrhoea, *biscuit-pap* with hartshorn-water and *yolk-milk* (vd. B. I. P. II. Chap. 7.) appeared to be the best after human milk. Several times the diarrhoea was stopped by the simple use of a yolk mixed with cinnamon water.

But I also saw *two* babes die of repeated relapses into acid diarrhoea. Both were children of one and the same Creole mother, who had eleven times lain in, exclusive of some abortions. They first caught an eruption of thrush by bad food taken in the first week of life. Soon after they fell into an excessive light-green diarrhoea, which was stopped three or four times, but coming back the fourth and fifth time, as happened in their fifth and seventh month, turned to mortal inanition. Deviation from the prescribed diet seemed, indeed, to have favoured each of the relapses, but still I cannot deny, that both little ones even from the day of birth exhibited a cachectic complexion, which led me to suppose, that they had been born with a diseased liver. Even their skin appeared but little active, for, being vaccinated three times in succession each failed.

Lientery of babes was always easily cured by me and without special precepts, if newly caught and not preceded by any other illness of the intestinal canal; but was obstinate and inclined to atrophy, if neglected or wrongly treated or immediately following thrush. The most obstinate was *lientery* of babes newly weaned, as will be more fully treated of in the following Section (vd. 42.).

The babes attended by me for *bloody diarrhoea* had mostly entered into the period of dentition, a reason why my remarks shall be reserved for the following Section (vd. No. 39.).

Against diarrhoea symptomatic of thrush the *yellow wax* proved useful several times (vd. No. 26, below). —

Paralytic diarrhoea would never be an object of medical practice, provided physicians, at first sight, were aware of this fatal symptom. It is often dubious, however, whether or not a diarrhoea be paralytic, chiefly when physicians are called in the night to a sick infant not previously seen by them, and when people give no true account of the disease. In such a case they should never prescribe any medicine, until they have first made known the danger and thus secured their reputation.

25. Cholera.

For cholera I attended in Java but *two* suck-

lings, white twins, one and a half month old. Both had at once and on a sudden been seized with that disease, then sporadical at *Samarang*. Whether the disease was only to be imputed to atmospherical influence or partly to bad suck or wrong accessory food, I could not decide, though I supposed the latter, when I found that the mother's breasts were but scantily filled with milk. The first attack had occurred only a little before my arrival. The twins were incessantly whimpering from the gripes and spasms, and voided by turns from the mouth and otherwise considerable portions of a wheyey liquid, which had a sour smell and was mixed with some light-green bile and bloody streaks. Their hands and feet were cold, the voice hoarse and pulse hardly perceivable. I forbade sucking, put a warm poultice on the belly, got the extremities rubbed with warm cloths and ordered a teaspoon-ful of *fennel-water* with half a drop of *hartshorn-spirit* to be taken every ten minutes. One expired after two hours, the other recovered.

26. *Thrush (aphthae).*

Predisposition.

Thrush is a greater matter for medical practice in tropical colonies, than in Europe. I know no form of lingering distemper, upon which thrush might not *there* supervene, if the patients are

white, and *vice versa*, I know but few *gastric* symptoms there, which do not sometimes follow from thrush.

The total number of the patients I knew in Java, partly *primarily*, partly *secondarily* affected with thrush, exceeded *sixty*: 27 were new-born sucklings, yet without teeth; 21 were more advanced, partly yet unweaned; and 12 were full grown persons. The patients of the first class included about as many *Malay* as *European* descendants; most of the second class were white, and none of the third were coloured.

These observations have led me to suppose, that all the human races, living between the tropics, are almost equally predisposed to thrush in the earliest period of infancy, but that white subjects are more disposed to it than black at a more advanced period (vd. B. I. P. I. Chap. 2. A. b. 3.). I do not mean, however, that this difference in predisposition is quite hereditary. For, white and black races within the torrid zone differ too much in their manner of being brought up and mode of life, than to allow a doubt that their native predisposition to the disease in question is not modified by it. The former, for example, are fond of wine, grog, beer, cheese, ham, pickled cabbage and other sorts of stale food, whereas the latter are satisfied with the fresher and more wholesome aliments of their country. The coloured people of the East-Indies, besides, chew

siri or *betle*, a usage, which is deemed good for preserving the gums etc.

The ensuing remarks only apply to *infantile* thrush.

Causes and complications.

The 27 cases of thrush met with in new-born sucklings, with few exceptions, appeared *primary*, i. e. not following after any other disease or illness, whereas the 21 cases met with in older children might mostly pass for *secondary*.

The whole amount of *secondary* cases was about *twenty six*: 22 of which followed some gastric derangement already extant, as: extreme constipation, bloody diarrhoea, lentergy, mesenteric atrophy, helminthic obstruction, stomachic and intestinal inflammation (dysentery); 4 catarrhal fever.

The amount of *primary* cases was about *twenty two*, which could all, according to my etiologic inquiry, be derived from such causes, as are favourable to gastric disorder. At least there was not any among these twenty two little patients, but had already eaten in the first or second month of life. Many of them, moreover, had taken bad food, e. g. sour honey, stale orange sirup, rice with bananas, white bread with sugar and spoiled milk etc. Others had been surfeited. More than once I happened to see a babe's mouth so hastily filled by a black nurse, that the poor

little thing had no time for swallowing, but fell asleep and afterwards awoke with a mouth yet half full of fermenting food. But I never knew a babe catch thrush, who was nursed with mere suck during the first four months of life.

Event before dentition.

Some authors divide the thrush of new-born children into two varieties: a *benign* and *malign*, or *dispersed* and *confluent*. The former means an eruption of small, whitish, distinct pustules from the more or less inflamed mucous membrane of the tongue, cheeks, lips, gums, palate, gullet etc.; the latter a membranous, cream-like cover, more or less extended on the mucous membrane of those parts (French: *muguet*). My own opinion is, that both varieties are two different degrees or stages of one and the same disease. For, all those cases of thrush, which appeared *confluent* at my first visit, had lasted several weeks and had been neglected, whereas those cases, which I found *dispersed*, had not continued so long.

The amount of new-born infants I met with in *confluent* or neglected thrush, was *eight*, all together characterized by extreme emaciation, hoarseness of voice and difficult deglutition; some by vomiting every portion of suck or food taken; others by lenteric stools. *Seven* died of inanition after three, four and more weeks; *one* recovered health with difficulty *five* lost the cream-like

covering of the mouth some days before death, their tongue from that moment appearing murrey and at times bleeding.

In *dispersed* or new-caught thrush I met 19 new-born children, who all recovered, *fourteen* within a week or two, *five* after a longer space of time.

Event at or after dentition.

The thrush of those infants teething or past teething never was so confluent. *Six* cases, supervening upon purulent diarrhoea, dysentery and gastritic symptoms, ended fatally; *one* ditto, neglected, passed to a rapid gangrene of the mouth (*noma*), fatal also; *five* or *six* ditto, partly neglected, partly joined with an accumulation of worms within the intestines or incipient atrophy, passed to obstinate little ulcers of the mouth; the rest joined with less suffering were cured within eight or fourteen days.

Diarrhoea symptomatic of thrush.

Besides the above cases of thrush always visible at the mouth, I attended some younger and elder sucklings for a particular kind of diarrhoea, which I have represented as *symptomatic* of thrush (vd. No. 24.) on account of two anatomical dissections, proving the lower part of the intestines to have been affected with thrush, though not a trace of it had appeared in the mouth.

This diarrhoea, always inclined to the acute form, sometimes succeeded to fever and swept away *four* of *twelve* little ones, seized with it.

Treatment.

In the first years after my arrival in Java I was wont to prescribe a linctus of *borax*, *lemon-juice* and other empiric medicines, [usual in Europe for infants affected with thrush, while I did not sufficiently attend to a due regimen. Hence it happened, that this disease, though simple and but newly broken out, was never healed promptly, but sometimes even increased. Afterwards I adopted the following general and special precepts.

a. General precepts.

- 1) I ordered the child to be nursed on mere suck. But this not being practicable, or the first year of life being past, I permitted small portions of a thin fresh-prepared pap of sago, biscuit or arrow-root to be given at regular times, without any addition of sugar, salt or other seasoning substances.
- 2) I ordered one or two teaspoon-fuls of a *mouth-wash*, prepared of fresh herbs, to be slowly swallowed after each repast of the little patient, in order to cleanse the mouth of adherent and fermenting remnants of food, for which purpose I chose some subaromatic or lenient herbs, by name: *herba Ocymi gra-*

tissimi L. (Malay: *daun selasse*); *folia Myristicae glabrae* Bl. (Malay: *daun calappa tjoon*); *folia Abri precatorii* (Malay: *daun saga*); *folia Lavandulae carnosae* Pers. (Malay: *daun ortolan* or *djinten*). The three former I bestowed for hot infusion, to be prepared at home immediately before each application (vd. form. 2 et 3 of the Appendix); the latter for expression of the fresh sap to be diluted with water. — By the way I must not omit to mention, that my first knowledge of those herbs was due partly to an Arabian physician, partly to a Creole woman, both of whom had the name of being most successful in curing thrush.

- 3) I ordered the lips and edges of the patient's tongue to be smeared several times a day with an electuary of *yellow wax*, prepared after form. 4 of the Appendix. A similar remedy under the name „*menyak kawang*“ is in use among Javanese *dookoons* (quasi-physicians).
- 4) I ordered the little patients to be daily bathed in tepid water and often exposed to the open atmosphere.

These measures always proved sufficient within a week or fortnight to cure a sucking child subject to the first degree of *primary* thrush. Of the eight sucklings, who had attained to the second degree, that is to say, whose complaint had

become confluent or inveterate, I could only cure one, as has already been mentioned. This child, which had lost its ability to suck, when freed of thrush, was kept alive solely by the use of *yolk-milk* (vd. B. I. P. II. Chap. 7.).

b. Special precepts.

In two cases of thrush joined with *acid* diarrhoea, I made use of *absorbent* medicines, but did not find the least advantage from it. Afterwards I recurred in such cases to the general method, and met with more success.

For complication with *lientery* and *bloody* diarrhoea, particularly diarrhoea *symptomatic of thrush*, I found a potion of *yellow wax*, prepared with some grains of dried soap (vd. form. 5 of the Appendix), to be most salutary, while *calomel* was hurtful.

When complicated with *costiveness* and *worms* within the intestines, I recommended a teaspoonful of *castor-oil* to be now and then administered, which proved useful more than once.

Small *ulcers of the mouth*, observed on infants previously affected with thrush, healed pretty quickly after having been touched with a pencil dipped into a very dilute *liquor natrii chlorati* (chlorure liquide d'oxyde de sodium), when divers other medicines had been tried in vain. Whereas for mortification of the mouth (*noma*), once occurring in a mongrel child which had passed its

first year, the same remedy proved unavailing, as the disease had progressed too far. Should I once again be consulted for such a case, I would not hesitate to try an application of *creosote* lately discovered, diluted with vinegar.

27. *Convulsions.*

There occur three kinds or rather degrees of convulsions with infants sucking: *first*, convulsive laughing, shrugging and being frightened in sleep, as happens in a state of health; *secondly*, transient distortions of limbs, as are observed in humoral diseases of the belly, e. g. in bilious and acid diarrhoea; *thirdly*, permanent distortions of limbs and eyes, symptomatic of inflammation of the brain and spinal marrow according to the anatomical researches of French physicians.

Convulsions *permanent* or of the third degree, incidental to the first year of life, are a most dangerous symptom within the torrid zone, nay always fatal, if not subdued by a speedy and energetic treatment (vd. my remarks on tropical daylight influencing the brain, in B. I. P. I. Chap. 6). Twelve hours mostly decide for life or death. Frequent causes are:

- a) *A poisonous corruption of suck* from a violent emotion on the part of mothers and nurses.
- b) *Suppression of bilious diarrhoea* by internal quackery.

c) *Suppression of any precedent eruption* by external quackery.

White sucklings, it would seem, are more susceptible of those causes than dark-coloured. Accessory symptoms are: a dry skin, more or less heated, want of bilious excretion and urine.

During the first years of my stay in Java I trusted in *antispasmodic* medicines against this morbid affection, e. g. *musk*, *valerian*, *flowers of zinc* etc., neither did I prevent mothers and nurses from giving suck, nor from applying any strong scented herb (e. g. *fresh rue*) to the child's nose. The result was, that I successively lost five little patients. Afterwards I adopted the following method.

I always forbade sucking; I applied forthwith an *epispastic* or *revulsive*, if any eruption had been repelled from the skin; if not, I put three, four to six *leeches* ^{c)} on the temples or pit of the stomach; I repeatedly affused the head with *cold* water; I desired $\frac{1}{3}$ or $\frac{1}{2}$ grain of *calomel* and $\frac{1}{2}$ teaspoon-ful of *castor-oil* to be taken by turns, every quarter of an hour; a tepid aperient *clyster* to be

c) The leeches of Java suck very greedily, if newly caught, and create the apprehension of a dangerous after-bleeding, if more than middle-sized, a reason why the smallest should be chosen for little children, and a means should be kept in readiness to stanch the blood in case of necessity.

given every hour; a fresh air to be kept within the sick room and every kind of perfume removed; allowing for drink only *cold sugar* and the *water* of almost ripe *cocoas*. —

By this improved method *seventeen* out of *twenty six* sucklings, seized with permanent convulsions, escaped death.

28. *Trismus (locked jaw) and tetany.*

Both of these nervous affections occurred, in my practice on little children in Java, only as a secondary symptom and a certain prognostic of impending death, a reason why it would be ridiculous to recommend a particular treatment for either.

29. *Periodic pulmonary spasm.*

The inscription means a spasmodic paroxysm peculiar to *white* children in tropical climates, suspending the respiratory function for thirty or forty seconds, and changing the natural colour, chiefly of the face, into blue or livid. It originates some days after birth. The fits suddenly occur at the time when children awake from sleep, cough, gulp or cry. A deep inspiration always concludes the fit and restores the voice and natural colour.

Upon the whole I knew *eight* male infants subject to this affection, each of them being fair,

blue-eyed, robust and plethoric, one being my own child. The fits increased in frequency until the fourth or fifth month of life, then decreased, and stopped five times towards the end of the first, twice in the second and once in the third year. I never prescribed any medicine, but always entreated the mothers to allow the infants thus afflicted to spend the day naked in the open air, frequently to take a cold bath and to keep from them every kind of stimulant food. Applying one or two strokes with a small rod to the infant's buttocks, I found, did much contribute to shorten the duration of the fits. Vd. my remarks on the *blue disease* in B. I. P. I. Chap. 7. A. 1. a. —

30. *Pulmonary catarrh (asthma pituitosum acutum).*

A sudden attack of *asthma* menacing with suffocation, attended with a rattling in the throat symptomatic of a profuse secretion of mucus, but without any perceivable fever, I met with only *twice* in Java in sucking infants, one three, the other seven months old, both mongrel. — To remove the danger of suffocation I prescribed a vomit-linctus of *sulphur antimonii praecipitatum* and *ipecacuanha* in both cases, then applied a *blister* ^{b)} to the chest and caused an *aperient*

d) The blister I used during my later stay in Java, was

clyster to be used several times, in order to open the infant's bowels, which were much constipated. Besides I took care, that the air of the sick-room was often renewed during the day, but in the night I desired the windows and door to be shut up to prevent catching cold anew. With the same view I recommended a night-dress a little warmer than usual, and put off bathing until the excessive secretion of bronchial mucus had stopped, which lasted about a week.

The day after the vomit had been taken, I discovered that one of the little patients was slightly affected with thrush in the mouth, but soon recovered of it by means of a *wax-potion* and suitable diet, without leaving any bad consequences.

31. *Erysipelas (with total intumescence of the body).*

Of this odd form of infantile distemper I met in Java but *one* case and which proved fatal. The patient, a male suckling of European descent, was nursed by the mother. Though born with a delicate frame, he made an astonishing progress in size and stature from his second month forward, a circumstance, which I took for a mark

prepared of a scarab native there and belonging to the genus of „*Mylabris*“. In all urgent cases it is preferable to the common *cantharids* imported from Europe, on account of its greater efficacy.

of health, as I never heard him cry. At the end of the second month two incisors were seen cutting the gums. From this moment there appeared traces of uneasiness, as: a disturbed sleep, costiveness and constant dryness of the skin. The warmth of the latter was at times feverish and its colour inclining to icteric. When I got the little one undressed in order to examine its skin with more attention, I discovered the right thigh to be in a state of intumescence, glossy, tense, diffuse, falling from yellow into reddish and seemingly painful. The day after this swelling passed upwards to the right shoulder, leaving a pallid stiffness of the cutaneous tissue on the right thigh. The third day it reached the face and left side of the trunk. The fourth day an icteric and tumid appearance had spread over the whole surface of the body; the babe died under symptoms of cramp and choking.

My treatment in a few words was this. — The first day I prescribed some rhubarb-sirup with magnesia; the second day calomel, to be taken $\frac{1}{4}$ grain every two hours, besides aperient clysters and a blister on the epigastrium; towards the end of the third day a tepid bath and an emetic. —

The original source of this disease, as I unhappily conceived too late, had been the spoiled milk of the mother, who was much troubled with hemorrhoidal and gastric disorder, consequent

partly on bad diet and partly on a choleric and passionate temper. Her first child, a male, had been obliged to be given to a wet-nurse, because it continued to suffer uninterruptedly, and even twice fell into a fit of convulsions, while at her own breast. Her second child, a male too, was the above patient whom she suckled until he died. Her third child, a female, was from the day of birth suckled by a nurse, taken from the interior of the country, and remained healthy.

32. *Vesicular eruption (pemphigus).*

The number of sucklings, whom I saw affected with vesicular eruption in Java, was *three*, two of European, one of Malay descent, the two former one and five, the latter four months old. The vesicles, few in number and not attended with general distemper, disappeared without leaving any traces at the fourth or fifth day after the eruption, if kept inviolated, but left painful excoriations of a stiver's circumference and more, if broken by scratching. — The daily bath was not suspended for this affection (vd. B. I. P. II, Chap. 2.). Application of fresh *cocoa-milk* proved salutary for the excoriations caused by it.

33. *Scurf on the face (tinea faciei).*

Scurf on the face of sucking infants is distinguished into two species, a benign and malign, the former known by the name of milk-scurf or

milk-scab (*crusta lactea*), the latter by that of serpiginous scurf (*crusta serpiginosa*).

a. *Milk-scurf.*

I had only *two* sucklings to attend in Java for milk-scurf, both of European descent, one four, the other seven months old. The eruption disappeared within three or four weeks by: restriction of food, the daily use of a tepid bath and of a powder consisting of $\frac{1}{3}$ to $\frac{1}{2}$ grain of *Aethiops antimonialis* and three or four grains of *calcined magnesia*.

Besides I knew a white suckling who died of convulsions, which had followed from repression of milk-scurf by external quackery.

b. *Serpiginous scurf.*

For *serpiginous* scurf I attended nine sucklings partly of genuine, partly of mingled European descent, *three* one month, *six* between three and seven months old, when the eruption first broke out. The three former apparently owed it to a venereal infection by the mothers (who had themselves been infected by their husbands, a while before in-lying); two others to a venereal infection by nurses; and four, as appeared to me, to hereditary predisposition or depraved suck.

The eruption remained *two*, sometimes *three* and *four* months. The remedies prescribed were: change of suck; restriction of food; tepid baths;

an infused decoction of *sarsaparilla* with rhubarb-sirup, some teaspoon-fuls of which I ordered to be daily given; *Aethiops antimonialis* or *mineralis*, one dose of which (commencing with $\frac{1}{6}$ grain and gradually increased to one grain) was to be administered every day; at last (never in the beginning of the treatment!) a wash of one scruple of *blue vitriol* to eight ounces of water. — Once, when the eruptive complaint did not yield to these remedies, I succeeded by using an ointment composed of $\frac{1}{2}$ drachm of *white precipitate* to one ounce of grease, a small portion of which was daily rubbed into the edges of the scurvy blotches and crusts covering the face, forehead and neck. — Twice, when the eruption had been suppressed by external quackery, strong convulsions followed, but did not cause the death of the little patients, as I succeeded to restore the eruption to the skin by the instant application of a stimulant poultice of *mustard*, fresh *moringa-root* and *vinegar* ^e).

e) The *mustard*- seed to be procured in Indian shops is often ineffectual. Not always fore-knowing this, it will be well to combine it with the above root, whenever it is intended speedily to act as a rubifacient or counterirritant. This root equals in virtue our *horse-radish*, and is produced by a small tree, called „*Guilandina Moringa* or *Moringa Zeylanica*“ in botany, and cultivated throughout the East-Indies. Its Malay name is: „*akar kellar*.“

34. *Prickly heat (lichen tropicus).*

This eruption, so often described by authors, is not only common to adult Europeans changing their native country for a tropical settlement, but also to their offspring, chiefly during the first months of life. But it is never an object of medical practice, nor its salutary or causal signification so unquestionable to me, as some writers have told it to be; for I have known many white persons lose prickly heat without catching a sickness, and *vice versa* many white patients, previously covered with prickly heat, get better without any relapse. Yet I will not deny, that either may at times happen. — This inconveniency cannot be better prevented and relieved, than by *cold baths* and *airy clothes*.

35. *Inflammation of the eye-lids (blepharophthalmia neonatorum).*

The ophthalmic disease designated by the above inscription commonly commences a few weeks after birth, and endures according to a less or greater severity from four to six and even to eight weeks. Its progress is divided into two stages: one of increase, another of decrease of the inflammatory action. Its difference in extent is besides expressed by different names, as: *blepharophthalmia glandulosa*, if the inflammation is limited to its primitive seat, the *Meiboomian* glands;

blepharoblennorrhoea, if it occupies the whole inside of the eye-lids; *ophthalmoblennorrhoea*, if it has spread to the conjunctiva of the bulb. —

The number of new-born infants, whom I attended in Java for this disease of the eyes, was *thirteen*, partly genuine, partly mingled offspring of Europeans. *Four* of them owed the complaint to a venereal *leucorrhoea* of the mothers (in fact imputable to the fathers, who had gone astray during their wife's pregnancy). These four instances were the most severe and ended twice in blindness, once of one, another time of both eyes, for want of being timely remedied by art. The other instances seemed to be caused by foul bathing water, the soap used for bathing, and a luminary influence often too stimulant.

My method of cure, which was *eleven* times crowned with success, was this. I desired the mothers:

- 1) To take care, that the little patients were never disturbed in their sleep.
- 2) Continually to keep off a stimulant lumination, in the day by darkening the room in a uniform manner, in the night by putting an apt screen before the bed.
- 3) To change the sick-room at sundry times during the day for renovation of air, and to keep open a window in the night for the same purpose.
- 4) Daily to apply a tepid bath.

- 5) To restrict the patients food to mere suck and to keep their bowels open by means of clysters.
 - 6) Often to cleanse the patients eyes, while they were not sleeping. In the first two or three weeks of the disease I ordered for this purpose pure *tepid rain-* or *river-water*, the latter having been kept for some time in earthen vessels and cleared by filtration. Afterwards I added some *laudanum*, at first one, then two and so on more drops to one ounce of water. If this were not sufficient to moderate the profuse mucous secretion from the eyelids, I prescribed a more tonic collyrium, composed of *one* or *two* grains of *white vitriol* or *two* to *four* grains of *alum* to one ounce of distilled water, with an addition of some *laudanum*. Instead of being injected into the eyes, the above liquids were insinuated by means of a soft sponge, previously cleared by boiling and carefully cleansed before and after each application. Whenever the eyelids were glued together, I got them gently separated by repeatedly touching them with the above sponge dipped in tepid rainwater. — Once, when I was consulted after the cornea had already passed into a state of suppuration, I daily insinuated with a pencil one drop of *laudanum* into the internal corner of the eye, which proved successful.
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S e c o n d S e c t i o n .

Morbid conditions most frequently met with during the cutting of milk-teeth.

A. Affections of the chylopoetic organs.

The morbid affections of the chylopoetic system I met with in Java among infants teething, appeared more frequently *acute* than *chronic*, and the latter more frequently *periodical* than *continual*. The principal of the former were: inflammation in the upper part of the intestinal canal, inflammation in the lower part of the intestinal canal and inflammation of the liver and biliary ducts; of the latter, besides thrush already mentioned in the foregoing Section: bloody diarrhoea, bilious diarrhoea, atrabilarious diarrhoea, mesenteric atrophy, intestinal ulcers, piles and prolapsus ani.

36. *Inflammation in the upper part of the intestinal canal (gastro-enteritis).*

This affection is to be distinguished into two degrees: a *lesser* or rather enhanced irritability inclining to inflammation, and a *higher* or more perfect inflammation. The diagnostics of the *lesser* degree are: feverish heat, great thirst, accelerated pulse, dryness and marginal redness of

the tongue, painful tension of the epigastrium, nausea, vomiting, costiveness etc.; those of the *higher*, besides the above, are: a tormenting disquietude, extreme anxiety, periodic shrieks, coma, convulsive distortion of the face, vomiting of blood etc.

The amount of infantile patients, in whom I observed those symptoms, partly during, partly after the cutting of milk-teeth, but mostly during, exceeded *fifty* and included more white and mongrel white than coloured children. I treated them in the following manner.

- 1) While the fever continued I forbade any solid food. Unweaned patients were allowed to suck a little, at most every four hours, and to take in the interval some cooling demulcent drink by teaspoon-fuls, e. g. *water* of nearly ripe *cocoas* mixed with freshly expressed *cocoa-milk*, or instead of it a fresh emulsion of *canary-kernels* (vd. form. 6 of the Appendix). Weaned patients took greater portions of the same drink.
- 2) I desired an *aperient* clyster to be repeatedly given, but if the little patient was extremely costive, I prescribed some *castor-oil* either pure or gummed.
- 3) If the patient was plethoric and robust for its age, and very feverish, I ordered some *leeches* to be immediately put on the epigastrium, a measure which I repeated ac-

according to circumstances at the third and fourth day of the disease, and which always proved beneficial.

- 4) I never neglected to recommend a *cool chamber* and *light covering*.

The daily bath was suspended, as may be imagined. —

By such treatment *thirty two* of the *fifty* little patients, whom I have now mentioned, recovered within five or eight days; *thirteen*, who came later under my care and whose attendants did not truly observe my directions, did not recover until three or six days later; *five*, who were extremely ill from the beginning, expired. Perhaps even these might have escaped, had I been less timid in letting blood at the first approach of the disease, or had they not been so early gratified with solid food, which I was led to suppose they had received.

The incipient convalescence (*crisis*) dated from the period, that copious and feculent bilious stools had appeared, concurring with returned perspiration and sometimes with furuncles. Not until these prognostics were extant, did I grant small portions of plum or banana-sauce unspiced, and one day after, scanty portions of thin biscuit or rice-pap.

Of the five deceased infants only *two* were permitted to be opened. One exhibited an abundant injection of the stomachic and duodenal ves-

sels together with numerous blackish points or spots on the internal surface of that part of the intestinal canal; the other showed many scattered ulcers of considerable length on the internal surface of the *jejunum* and upper part of the *colon*.

37. Inflammation in the lower part of the intestinal canal (*colitis et proctitis*).

Inflammation in the large intestines, especially near the extremity of the *colon* and in the *rectum*, can be more easily discovered in tender infancy, than inflammation in the stomach and small intestines. The diagnostics leaving no doubt, that such an affection exists, are, besides the general symptoms of internal inflammation (fever, thirst, a dry skin etc.): colic, redness of the anus and tenesmus. — I distinguish between three degrees of inflammation in the lower intestines, as:

- a) A *lesser* degree or *catarrhal diarrhoea*, with frequent but scanty discharges of bilious, bloody and mucous excrements.
- b) A *higher* degree or *bloody dysentery*, with stools by no means containing faeces, but only consisting of some blood and mucus.
- c) An *extreme* degree, called the *white* or *dry dysentery*, with stools absent or at most consisting of some mucus.

a. Catarrhal diarrhoea.

The number of children, whom I attended

for this affection in Java, amounted to *forty* or *fifty* and included nearly as many dark-coloured as white ones, a few of whom had finished the cutting of the milk-teeth. They all recovered within six or eight days, three or four excepted, whose disease attained to the second degree and of course continued longer, because my precepts had been disobeyed. The convalescence commencing was announced by a substantial increase but numerical decrease of bilious stools, the return of cutaneous perspiration and eruption of furuncles in some cases. My curative plans consisted in: reducing the food to mere suck, if the patient was a suckling, or to measured portions of rice or sago-water, if it was an older child; administering small doses of *calomel* with a trifling addition of *sulphur antimonii praecipitatum*; applying a *blister* on the epigastrium after the feverish heat had decreased; allowing somewhat warmer garments; and suspending the daily bath.

b. *Bloody dysentery.*

Of the infants I attended for bloody dysentery, more were white than dark-coloured. Their amount exceeded *fifty*, one half not having finished the cutting of the milk-teeth. *Thirty*, in time submitted to my care and truly nursed after my orders, recovered within ten or fourteen days, the convalescence commencing with the same salutary prognostics as in *catarrhal* diarrhoea. *Nine*,

who had been ill of the disease several days before my first call, or had not been nursed according to my directions, or privately delivered up to quacks, expired, — the rest fell into lingering sickness from the same causes (vd. No. 39).

My method of curing the disease was this.

- 1) I recommended the same regimen as I did for *catarrhal* diarrhoea.
- 2) I desired $\frac{1}{3}$ or $\frac{1}{2}$ grain (by infants more advanced even *one* grain) of *calomel* to be taken every two or three hours, and according to circumstances some blue *mercurial ointment* to be besides rubbed into the abdomen, in order to affect the gums as soon as possible. This effect, when obtained, always coincided with the phenomena of an incipient convalescence, but failing, proved the case to be desperate.
- 3) For plethoric *white* infants, who generally lay in a more intense fever than dark-coloured ones, before recurring to *calomel*, I ordered, provided I was early enough consulted, some *leeches* to be put on the belly, as also an emulsion of *canary-kernels* with some *castor-oil* or a potion of *yellow wax* to be taken for one or two days, such a practice appearing to me preparatory to a more salutary operation of *calomel*.
- 4) I desired them, moreover, to attend to a *strict diet* for one week long after the first

day of convalescence, in order to prevent any relapse, which commonly proves fatal after this disease.

c. *White or dry dysentery.*

For *white* or *dry* dysentery I had but white infants to attend, who had not yet finished the first dentition, but who were distinguished for a vigorous and plethoric frame. Their amount was *fourteen*, six of whom died between the third and fifth day of the disease, and eight recovered. The remedies to be most relied on against this perilous disease, provided they are timely enough used (as was not always the case with the little patients above), are *evacuative*, as: *leeches* to be applied near the anus or on the abdomen, from three to six and more in proportion to age; a *tepid clyster* of barley-water and oil, to be given with caution, lest the inflamed *rectum* should be irritated; *mercurial frictions* of the abdomen; *calomel* to be taken in half or whole grain doses, every two or three hours; and *gummed castor-oil* to be taken in the interval. For drink: the water of nearly ripe *cocoas*, or thin *barley-water* without any other nutriment, until the danger is gone. Sucklings, however, may now and then be gratified with a little suck.

38. *Inflammation of the liver and biliary ducts (hepatitis).*

The symptoms characteristic of an inflammatory state of the liver also differ according to the intensity and seat of inflammation. A *less* degree of *hepatitis* is always attended with some deviation, often increased secretion of bile, but not always with fever; *high* degrees of *hepatitis*, on the contrary, are always accompanied with the general characteristics of an inflammatory fever; with a painful tenseness or turgidness of the right hypochondrium; with the appearances of an obstructed secretion of bile (*icteric* complexion, constipation of the belly, dun coloured urine etc.); and also with symptoms of *cerebral sympathizing* (a burning head, delirium, convulsions, dulness etc.). Inflammation limited to the convex surface of the liver has a resemblance to *pneumonitis*; but when seated in the concave surface and biliary ducts (as it mostly is in tropical climates), it is attended with symptoms of *intestinal* irritation or inflammation (vomiting, tenesmus, stools bloody and mucous but not feculent).

The amount of infants, while teething, whom I attended for fever with a presumable inflammation of the liver and biliary ducts, exceeded *sixty*, most of whom appertained to the white race. Three fourths of these cases might have passed for *benign* or *simple*, in as much as

they were only attended with the lesser symptoms of *intestinal* irritation, and always attained a favourable crisis within a week or two. The other fourth part was connected with *cerebral* or *nervous* symptoms (coma, convulsions etc.), which frequently continued three weeks and in *five* cases ended in death. — The period of convalescence always dated from the appearance of feculent bilious stools, perspiration returning and not unfrequently from furuncles. —

My medical treatment was this. — If the disease appeared to be connected with an inflammatory affection of the *upper* part of the intestines, I followed quite the same method of cure, which has been explained in No. 36. Besides I desired the hepatic region to be daily rubbed with a scruple of blue *mercurial ointment*, diluted with some sweet oil, but I abstained from the internal use of *calomel*, a medicine which is not salutary, unless the internal surface of the stomach and small intestines are free from inflammation. — When complicated with inflammation of the *lower* intestines, I prescribed the means recommended in No. 37, b., inclusive of *calomel*. — Against symptoms of *cerebral* sympathizing, I tried *antispasmodics* in the first years of my Java practice (e. g. valerian, serpentaria, musk); but having experienced, that none of the little patients advanced under this treatment, nay three turned to gangrene at the lips and tongue, I had recourse

to *leeches*, the application or affusion of *cold water* to the head and a timely use of *calomel*, a practice, which gave better results (vd. No. 46 and 74 *infra*).

39. *Bloody diarrhoea.*

The expression „*bloody diarrhoea* or *bloody flux*“ means copious and loose feculent stools mixed with blood, slime and bile, but not attended with fever and tenesmus, nor a complete absence of perspiration. I name it *secondary*, if succeeding to a bloody dysentery (vd. No. 37, b.), *primary*, if caught by individuals in health. The former is much more dangerous than the latter.

For a *secondary* flux of blood I attended about *twelve* children, one half of whom died; for a *primary* *twenty four* or more, mostly white children, a fourth of whom died. This statement shows, that I was not successful in the cure of infantile bloody diarrhoea, but I am bold to say, that this was owing less to mal-treatment on my part, than to private quackery on the part of mothers. Mongrel white mothers in Java fancy themselves much more skilful than European physicians in stopping every kind of bloody excretion from the *anus*, a reason why they never send for the latter, when such an illness commences, or if they do so, they soon neglect their prescriptions and secretly resort to the use of *astringents* and *bitters*, so abundant in that country.

From such treatment on the part of mothers results a threefold mischief, as:

First, it frequently makes the case incurable, if it is an *acute* dysentery.

Secondly, it is likely to cause the case to become *malign*, if it is a *benign* or *primary* bloody flux.

Thirdly, it exposes a physician to lose undeservedly his reputation; for in case of a successful event the mothers now mentioned will usurp his merit, and in case of a fatal termination they will wash their hands of the affair.

Admonitions regarding prognosis.

- 1) Tropical physicians should never neglect to examine accurately, how long a bloody flux has endured, whether it has commenced with fever, and whether astringent medicines have already been used. To be more capable of inquiring after the latter point, it is necessary that they should be acquainted with the names, characteristics and virtues of the indigenous medicines usually employed.
- 2) They should never promise a prosperous event as certain, if the case has commenced with fever or been already treated with *astringents*.
- 3) They should not omit to prepare people for a fatal event, if the case has lasted above

two weeks or been preceded by *thrush* or a *raspberry-like eruption* (*framboesia*).

Therapeutic observations.

- 1) A *primary* flux, which has not long continued, nor been treated with *astringents*, will stop of its own accord, provided the little patient observes a strict diet, i. e. does not eat too much, nor take hard and stimulant (animal and hot-spiced) food. If its stools are scanty, though frequent in number, and tinged with some dark-green clammy bile, *two* or *four* grains of *calomel*, divided into six or eight doses, or a solution of *gum* with some *castor-oil*, taken by teaspoon-fuls, will be useful. If the little patient belongs to the white race and appears of a plethoric constitution, some *leeches* applied to the belly or about the anus will promote its recovery. Besides, its being often exposed to the open air and sometimes bathed will be of service, provided neither the atmosphere nor the bath are colder than 80° Fahr.
- 2) For a *secondary* flux of blood physicians should of all things examine, whether it concur with a *lingering inflammation* or *actual atony* of the lower intestines. The former case, more common in infancy, is discoverable by: frequent but scanty stools, traces of *tenesmus*, painful uneasiness of the belly and

scantiness of perspiration. The latter, though uncommon at dentition, may be supposed present, if stools are frequent and immoderate, tenesmus and colic quite absent, perspiration at times copious, and also if the precedent remedies employed have been antiphlogistic.

3) If *lingering inflammation* keep up a bloody flux, the recovery depends on:

a strict diet;

a prudent use of calomel; and

arousing the activity of the skin.

But if *intestinal atony* be present, let a *tonic* be tried with caution.

Practical observations on the use of *calomel* are:

- a) To prescribe doses adequate to infantile age and constitution, e. g. of $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$ grain.
- b) To let a longer interval elapse between each dose, than in *acute* dysentery, e. g. three, four or five hours.
- c) To add a small portion of *sulphur antimonii praecipitatum*, e. g. $\frac{1}{24}$, $\frac{1}{12}$, or $\frac{1}{8}$ grain for a dose (vd. form. 7 of the Appendix).
- d) To add now and then a trifling portion of *laudanum*, if the little patient should be of a very tender and sensible constitution, e. g. $\frac{1}{16}$ or $\frac{1}{8}$ drop for a dose (vd. form. 7 of the Appendix).
- e) Not to continue the use of calomel above *eight* days. Should a white swelling of the

gums appear within this space of time, the case may terminate in two ways, i. e., stools will either return to a natural state or grow excessive. In the former case a strict diet and suitable *epispastic* or *rubifacient* will complete the cure. In the latter case a *tonic* is to be tried. But if no white swelling should appear on the gums, after calomel has been taken eight days in succession, the case may be deemed as most critical.

- f) To cause, a teaspoon-ful of *gummed castor-oil* to be taken in the interval, if bloody diarrhoea should concur with an accumulation of *worms* within the intestines (vd. Sect. III. D.).
- g) No more to hope, for any relief by calomel, after the disease has taken a *hectic* turn.
- h) To abstain from the use of calomel, whenever a bloody diarrhoea follows a *raspberry-like eruption*, which has disappeared, or concurs with *thrush*, as in both cases I observed it to be injurious, whereas in the latter case the *yellow wax* several times proved useful (vd. form. 4 et 5 of the Appendix).

Means mostly to be relied on for arousing the activity of the skin, in secondary fluxes of blood, are:

- a) A moderate dress and cool lodging.
- b) Sprinkling the skin with hot water sundry times a day.

- c) *Blistering* of the abdomen, to be kept from healing for several days, or repeated at three or four different times, to favour an eruption of furuncles, which is a certain prognostic that danger is past. Should a bloody flux succeed to any maculous, papulous or pustulous eruption lately gone, a *sinapism* would be preferable to blistering (vd. No. 58. *Measles*; and 81. *Itch*).

Tonics tried by me with success in some secondary cases of infantile bloody diarrhoea, are:

- a) *Calamine* (*lapis calaminaris*) reduced to a most dusty powder, *one, two or three* grains of which mixed with some gum and sugar I ordered to be administered twice a day.
- b) *Armenian bolus* to be dispensed in like manner as the former.
- c) A decoction of the astringent root of *Psidium pomiferum* (Malay: *yamboo bedje* or *goyaves*), to be taken in doses of one or more teaspoon-fuls, four to five times a day (vd. form. 8 of the Appendix).
- d) A decoction of the root of *Corypha umbra-culifera* (Malay: *bongol bas*), being a milder astringent than the former, — of which two or more teaspoon-fuls may be taken three or four times a day (vd. form. 9 of the Appendix).
- e) A weak solution of the bark-extract of *Cedrela febrifuga* (Malay: *kayoo sooren*), being

at once bitter and astringent, to be taken in one or two teaspoon-ful doses, three times a day (vd. form. 10 of the Appendix).

Finally I wish to observe, that it seems to agree with the precepts of common sense to abandon, as soon as possible, the use of *tonic* medicines at the period of dentition, unless they should within a few days bring about some improvement. The following fact, which occurred on a voyage from Java to Europe, will prove that this intimation is not given without good reasons.

My second child, a stout girl of twenty eight months, fell into a bloody diarrhoea the day after we left Batavia. No leeches being on board, my treatment was limited to a *strict diet*, a potion of *gummed castor-oil* and small doses of *calomel*. Two weeks having passed, the symptoms of intestinal irritation or inflammation stopped, but the discharges of blood, mucus and bile increased to such a height, that I became apprehensive of death by inanition. Some doses of *gum catechu* were now tried, but which obviously aggravated the disease, a reason, why I had recourse to a *wax-potion*, which gave some relief. Arriving at the *Mauritius* about four weeks after the disease had commenced, I made a new attempt to restrain the loss of blood by means of a decoction of *Simarube*, but with the same bad result as before. My poor child was now reduced to such extreme

weakness, as to lead me to despair of her recovery. To comfort her with a strengthening food was all I thought, which could now be done. With this view I bought a hundred fresh heneggs, an unboiled yolk of which diluted with some water I caused her to sip from a teaspoon. The first day I gave but one and a half yolk, but seeing that it was beneficial to her, I administered more. Thus I kept her alive full three weeks, when the four hindermost *bicuspidēs*, the only milk-teeth yet wanting, cut one after another, from which moment the bloody flux stopped and her strength visibly returned. Such came to pass, when we had almost reached the *Cape*, after the child had successively consumed nearly *eighty* yolks.

40. *Bilious diarrhoea.*

Bilious diarrhoea of infants, when teething, in tropical climates is as frequently a *primary* as *secondary* appearance (vd. Sec. I. No. 24). If *primary*, it should be considered as preventive of other diseases, if *secondary*, as a sanative exertion of nature, never in either case to be checked by medicines, but only abridged and moderated by a diet in accordance to the precepts laid down in B. I. P. II., a continued use of the open air, baths of 90° Fahr. and a moderate dress.

Bilious diarrhoea of more advanced children within the tropics is mostly a *secondary* phenomenon and should be considered no less salutary,

than when occurring at dentition, as will appear evident from my remarks in the third and fourth Sections.

41. *Atrabilarious diarrhoea.*

The characteristic of this diarrhoea is voiding of a matter like *fetal meconium*, a phenomenon, which I observed in *six* cases at the first dentition. The little patients, of white descent and surfeited with coarse food in my opinion, were in no fever, but had a dry torpid skin and became emaciated by little and little. Two recovered within fourteen days by means of a strict diet, tepid baths, aperient clysters and moderate doses of castor-oil. The others suffered longer, for which reason I caused them to take small doses of *calomel*, which likewise cured them.

42. *Mesenteric atrophy.*

This signifies a diseased state of the lacteals and mesenteric glands, obviating the absorption of chyle. The chief symptoms of it are: extreme emaciation of the limbs; distention of the belly, on which sometimes little knobby indurations are perceivable by touch; periodic constipation of the belly, not rarely alternating with an obstinate *lientery* (vd. Sect. I., No. 24); a relaxed, withered and inactive skin; strong appetite; cachectical complexion (dim-pale, dim-yellow, dim-brown etc.

according to patients' descent); at length hectic fever.

The common causes of this diseased state are: being nursed without suck (vd. B. I. P. II. Chap. 7), too early weaned and wrongly nursed afterwards (vd. B. I. P. II. Chap. 8).

The number of the infants in Java, in whom I met the symptoms of mesenteric atrophy, was about *thirty*, mostly born of white parents. *Eight* of them had not passed their tenth month, and were still sucking, when intrusted to my medical attendance; the rest were more advanced and had already been weaned some weeks or months. The progress of the disease differed in each, according as it was attended either with lientery or costiveness. In the former case it lasted from five to six weeks at most, in the latter several months, but never above eight. The number of those, who recovered, amounted to *twenty one*, that of the deceased to *nine*. Some of the latter were already near death at my first visit, others but too frequently deviated from the prescribed diet.

Treatment.

To effect a cure, strict attention to diet is most necessary. As to diet, I include the following.

- a) *Food* agreeable to infantile age (vd. B. I. P. II. Chap. 6. 7. 8.). — In *four* instances I saw the atrophic state depart without med-

icines, when the little patients, who had between their eleventh and thirteenth month been weaned, were again put to the breasts by my advice and suckled two or three months longer.

- b) A *thin dress* and continual exposure to the *open air* during the day-time.
- c) The daily use of a *simple* or *aromatic bath* of 90° to 96° Fahr. — In preparing the latter I availed myself of a hot infusion of fresh aromatic herbs indigenous of Java, e. g. *Baccharis Indica* (Malay: *daun blontas*), *Ocimum gratissimum* (Malay: *daun selasse*), *Vitex trifoliata* (Malay: *daun lagondi*).

As to medicines, but very few of those recommended by European authors against mesenteric atrophy seem to agree with hot climates. Among these there are:

- a) *Balsamic liniments* to be applied to the abdomen, and impregnated with blue *mercurial ointment* in such cases, as are connected with induration of the mesenteric glands.
- b) A decoction of *post-paper in cow-milk* to be taken in teaspoon-ful doses (vd. form. 11 of the Appendix), of which I observed a wonderful effect in two cases joined with an exhausting *lientery*, which had obstinately resisted other medicines.

The root of *Columbo* and an extract of *Cedrela* bark, which I prescribed in two or three

similar cases, had a bad effect. — *Calomel* combined with *sulphur antimonii praecipitatum* and *rhubarb*, as also the *muriate of barytes*, medicines deemed resolvents, proved of little or no avail in those few cases, in which I tried them. — *Jodine*, by French physicians recommended against mesenteric induration, I did not prescribe internally in Java, in case it might be too exciting for a hot climate.

43. *Intestinal ulcers.*

Ulcers of the intestinal canal betray themselves by the presence of *pus* in stools. Should they be seated in the middle part of the intestines, stools contain besides *pus* a whitish intestinal fluid, sometimes mingled with blood and membranous fragments. Should they be confined to the *rectum*, the voided *pus* appears mixed with natural excrements.

Of the *former* I had about *twenty* cases in my practice on Indian children. They were all fatal, and derivable partly from an idiopathic inflammation of the intestines, partly from a metastasis of *measles* (vd. Sect. III. No. 58). Half of the patients had passed the cutting of the milk-teeth. One, a mongrel Creole boy, fourteen years old, exhibited a perfect specimen of *intestinal consumption*. —

Of the *latter* I had *eight* cases occurring partly at, partly after dentition; all seemed to be

consequent on neglected dysentery, and *six* got cured though not without having put me to much trouble. The means I prescribed, were:

- a) A *demulcent food*, e. g. a smooth pap of sago, rice or arrow-root, while every kind of spiced and animal food was earnestly forbidden for *six* or *eight* weeks.
- b) An electuary of *yellow wax*, sometimes mixed with a few grains of *lapis calaminaris* reduced to a dusty powder, a teaspoon-ful or two of which slightly warmed I ordered to be taken several times a day (vd. form. 4 of the Appendix).
- c) A *blister* repeatedly applied to different parts of the frame, or instead of it an *issue* on one of the arms.

44. *Piles (haemorrhoides).*

I knew about *twelve* infants liable to *hemorrhoidal* suffering, all of white descent. *Two*, standing between three and five years, exhibited prominences on the anus of a very hemorrhoidal stamp. The others, between three and seven years old, suffered a periodic bleeding from the *rectum*, without diarrhoea or a visible swelling of the hemorrhoidal vessels. — *Astringents* proved most hurtful to such little ones. *Animal* food disposed them to frequent relapses. A *vegetable* food easy of digestion, in particular *cooling fruits*, as also an *airy dress*, *cold baths*, a few *leeches*.

put on the anus, a teaspoon-ful of *castor-oil* taken once or twice a day, never failed, on the contrary, to prove salutary.

45. { *Prolapsus ani.*

This complaint frequently supervened on the second stage of infantile dysentery. Whenever it lasted above a week, I was wont to apply an astringent decoction combined with tincture of opium (e. g. Rec. *decocti radicis Psidii* (ex 3j) 3vj, *tincturae opii* 3j), which soon removed it and without any bad consequences.

B. Affections of the brain.

I observed in Java that two sorts of *cerebral* affection concurred with the first dentition, as: an *idiopathic* one, to be called „*simple cerebral fever*“ and a *sympathic* one, already mentioned as an attendant on *hepatic* and *intestinal* inflammation (vd. No. 38).

46. *Simple cerebral fever (febris cephalica simplex).*

The characteristics of this fever are: a constant dry heat, most obvious in the head and face; strong pulsation of the carotids; dilatation of the pupils; continued twisting of the body; delirium; sometimes dulness (*sopor*) and transient convulsions. The belly is obstinately constipated, but exempt from hepatic, stomachic and intestinal irritation;

the tongue dry and white; the urine scanty and red; the white of the eye flushed but untinged with icteric.

The number of infants, whom I attended for this diseased state, was about *eighteen*, all of white descent and most of them remarkable for a plethoric frame. All without exception yet wanted the four hinder *bicuspid*es, and some of them even the four *eye-teeth*. None happened to die.

My prescriptions consisted in: *leeches*, *cold affusion* of the head, *cooling drink* (as, sugar-water or the water of green cocoas), *cooling purges* (as, cream of tartar with magnesia and sugar; *vd. form. 12* of the Appendix) and *clysters* of water, oil and salt. — I ordered *leeches* to be applied to the temples four or six in number, and to be repeated according to circumstances. *Cold affusion* of the head was had recourse to, when the leeches had dropped, as often as the burning heat in the head came back and until it was expelled. *Clysters* were given twice or thrice a day (tepid of course). —

Fourteen of the *eighteen* little patients just mentioned recovered by means of the above treatment within four or six days, their convalescence originating with loose feculent stools, perspiration returning and generally ending in an eruption of furuncles. Those, who became convalescent without the appearance of furuncles, relapsed if nour-

ished too copiously, in which case I repeated the former treatment with the exception of applying fewer leeches. —

In *four* cases the means now mentioned proved insufficient to subdue the symptoms of cerebral irritation, the little patients passing into a state of nervous somnolence, like that which European authors call „*febris hydrocephalica*.“ One of these little ones had been mal-treated previous to my being called, another had struggled with severe fits of *hooping cough* not long before. I ordered *calomel* to be given to them some days in succession, having half or a whole grain dispensed for a dose, with an addition of one or two grains of *jalap*, but could not find that they derived any benefit. I then prescribed a solution of *nitre in cocoa-water* (vd. form. 13 of the Appendix) and put a *blister* on the feet, which was in *three* cases followed by a salutary excretion from the skin, kidneys and anus. The *fourth* case at length became cured by an *issue*, made on one of the arms and kept open for about three months.

C. Affections of the skin and joints.

47. *Furuncles*.

The inflammatory tumours on the outside of the body called „*boils* or *furuncles*“ have their proper seat, in my opinion, in the sebaceous glands

of the skin. They are much more common within the torrid than temperate zones, though generally confined to the *white* race. Those individuals whom I found more particularly affected with them, have been *white* infants from one to four years old, and adult *Europeans* settled for a few years between the tropics.

As to the pathological nature of these tumours, I have already on several occasions uttered my opinion. Appearing *primarily*, they keep the body free from internal sickness; appearing *secondarily* in fevers and visceral inflammations, they are in my opinion more salutary than even bilious stools and a restored perspiration. — They differ in number and size. Frequently several dozens of boils break out on various parts of the body (as: breast, neck, belly, back, armpit, arms, legs, face and head), in which case they are not larger than hazelnuts. But their number is often limited to two or three, in which case they may equal in size a pigeon's egg.

A single furuncle, if of small size, will go on in hot climates from eight to fourteen days; if large, to three weeks, before being formed into a mature abscess. When matured, we may open it with a lancet, in case it should not break of itself; because to wait for nature to effect this, in many cases might be too tedious. We can promote its suppuration by the application of a *warm poultice* or *blister*, measures useful for such kinds

of furuncles, as are few in number, deeply seated and torpid in character. Should the core of a furuncle, on being opened, not appear duly mellowed, a few days' application of *unguentum basilicum* would be recommendable. The core having been discharged, all pain and hardness vanish and the opening will heal in a few days.

Several times I saw children for half a year or more subject to a periodical eruption of furuncles, some disappearing while others were coming. Such infants always excelled in health, if we look at a regular process of the internal functions of life, for they slept well, had a good appetite and regular stools, exhibited a pleased disposition and increased in strength and growth.

48. *Inflammation of the hip-joint (coxarthrocace).*

This disease, formerly called „*spontaneous hobbling*“, has only in later times been studied with attention. It prevails among infants beginning to walk, on account, it would seem, of their hip-joint being frequently injured by falling backwards and forwards. According to the opinions of European physicians, infantile predisposition to *scrophula* and *rickets* also implies a particular inclination to *coxarthrocace*, favoured by surfeit, and a metastasis in fevers and eruptions may be numbered among the causes, by which this disease is often induced.

The progress of infantile *coxarthrocace* in

the climate of middle Europe is characterized by *four* stages, as: one of incipient inflammation, another of incipient degeneration and luxation, a third of complete luxation and a fourth of total destruction of the hip-joint by suppuration and caries. —

The *first* stage, not always discovered, is of an undetermined duration (from some weeks to some months) and distinguished by a knocking pain in the hip-joint, chiefly at night, and a sense of numbness in the affected thigh, causing a slow tottery gait, sometimes fever. — The *second* stage is of a like uncertain duration (from weeks to months) and characterized by: a lengthening of the limb, shrinking of the buttock, pain in the knee, bending inward of the toes, hobbling gait and beginning emaciation. — The *third* and *fourth* stages run quicker, the *third* being characterized by: a shortening of the limb, swelling of the buttock, lessening knee-ache, cachectical complexion, hectic fever and absolute incapability to stand or walk; the *fourth* by: a fluctuating swelling about the affected hip etc.

The *two first* stages of the disease are curable. — The means of cure recommended for the first, are: a perpetual rest of the joint affected (the child must be restrained from walking); an antiphlogistic diet; leeches applied to the thigh; tepid baths; blisters of one inch in breadth and three to six in length, applied close behind the

great trochanter and kept for a time open. — The principal means of curing the *second* stage is „the actual cautery“, a *white-hot iron*, applied after the manner of professor *Rust*. —

When the disease has attained to both the *latter* stages, to restore the hip-joint is impossible, and whether life will be saved is improbable, at least dubious *f*).

In my Java practice there occurred in all but *two* cases of infantile *coxarthrocace*, one in a Creole girl two years old and native of the highlands; the other in a Creole boy two and a half years old and native of the coast. The disease was seated in the right hip in both cases, and had already attained to the *second* stage, when the parents sent for me; the girl having been hobbling for about six months and the boy a little more. Both infants had been in a fever and convulsive fits not long before beginning to hobble, but previously they were said by the mothers to have been able to walk properly.

The girl had been surfeited for a considerable time, and was suffering from mesenteric induration, when intrusted to my care. I caused her to obey a regular diet and take some resolvent medicines, e. g. every other day an increased dose of *calomel*, combined with *sulphur antimonii*

f) J. Ch. G. Joerg über das pathologische und physiologische Leben des Kindes. Leips. 1826. §. 527 — 562.

praecipitatum and *rhubarb*. When this had in some measure improved the morbid state of the lacteals, I drew with a *white-hot iron*², formed after the model of Prof. *Rust*, two burning streaks along the buttock and great trochanter of the diseased side. One of the streaks was made *five*, the other about *four* inches long. I kept them in a state of suppuration above three months by applying at first a simple cerate, and afterwards a stimulant ointment. The result was better than I had expected. On the day following the cauterization I perceived the affected limb to become in some degree shortened. By and by the pain of the knee appeared to abate, the suppleness of the thigh improved and the child could much better put down the sole of the foot. Before she was perfectly cured, however, she was taken away from me by her parents, who wished to leave Java, after she had spent in my house almost six months, under the careful and vigilant attendance of my late spouse. —

The little boy above mentioned as having also attained the second stage of *coxarthrocace*, and who at my first visit exhibited a pretty healthy complexion, was not permitted by his parents to be cauterized. Eighteen months afterwards, when I was about to leave Java, I happened several times to meet the same boy and was astonished at seeing, that his disease, though left to nature, remained the same, a circumstance, which led me

to believe, that infantile *coxarthrocace* in tropical countries has a less tendency to caries and fatal suppuration, than in Europe.

T h i r d S e c t i o n .

*Morbid conditions most frequently met with after
the cutting of milk-teeth.*

A. Affections of the spleen, salivary glands, bronchiae and eyes.

49. Inflammation of the spleen (splenitis).

Splenic inflammation often escapes notice not only, because it agrees in many symptoms with *gastritis*, *enteritis* and *hepatitis* (vd. No. 36, 37 et 38), but also from its frequent coexistence with the latter diseases. Its presence, however, is not to be doubted, whenever the general symptoms of a *gastric* inflammation is attended with a painful distention or a tumefaction of the left hypochondrium, which will manifest itself more distinctly, if the frame bend forward while in an erect position is examined by means of *percussion*. —

I discovered this diagnostic only on *six* infantile patients, of white descent and, advanced from four to eight years. They were remarkable

for constipation of the bowels and dryness of the skin, but not for an intense feverish heat. Two lay in a *semitertian* remittent fever, and one vomited blood. All six recovered, their cure dating from the appearance of feculent bilious stools and reestablished perspiration. My treatment consisted in:

An *antiphlogistic regimen* with all its appendants but the cold bath, especially a copious use of cooling drink (as, sap of *oranges* and water of green *cocoa-nuts*; mild purges (as, *canary-milk* (vd. form. 6), *River's potion*, *Seidlitz powder*); *leeches*; and *aperient clysters* (of tepid water, cocoa-oil and salt). Twice, when the splenic tumefaction remained above fourteen days, I had recourse to *calomel*, *mercurial frictions* and *blisters*, but found the beneficial effects of mercury to be less in this disease, than in *hepatic inflammation*.

50. *Mumps (parotitis).*

The parotid affections, which I observed in Java (exclusively of mercurial) were of three kinds, to wit:

- a) A less degree of painful distention concomitant with a common *catarrhal* fever, as is more or less incident to any period of life (vd. Sect. IV. No. 70).
- b) A *lymphatic* intumescence, wan and little painful, which was not always attended with

fever, and prevailed among children from five to fifteen years, indifferently of what race (Malay: *gondong*).

- c) A *phlegmonous* intumescence, flushed, painful and extending more or less to the *maxillary* glands, which was attended with inflammatory fever, and occurred only in infants from three to six years.

Of the *lymphatic* mumps I observed more than thirty cases partly on dark-coloured, partly on white children. It generally disappeared in less than eight days without medicines and other dietetic precaution, except the abstaining from the cold bath. Neither did it in any leave a *metastasis*, as far as I could observe, except in one case, when the parotid tumefaction of a mongrel boy, nine years old, changed into an inflammation of the testicles, which was by no means intense and soon disappeared by the aid of a cotton suspensory bandage.

For *phlegmonous* mumps, which never came to a prosperous event before fourteen days, I attended *seven* infants, in part genuine white, in part mongrel. *Five* of these recovered, the other *two* died. Recovery was ushered in by feculent bilious stools and a return of the cutaneous function, and twice by a kind of pustular eruption; death came on suddenly as in apoplexy, and was preceded by bleeding from the nose and collapsing of the swollen parotids. My treatment too

late solicited for one, and but half obeyed by the other defunct child, consisted of:

An *antiphlogistic* regimen exclusive of the cold bath; *leeches*, from five to ten put on the lower part of the neck (thus not immediately on the affected place) at the first commencement of the disease; a cooling purge of *cream of tartar* and *magnesia*; then *calomel*, a grain every two or three hours; *aperient clysters*, given once or twice a day; a *blister*, put on one or both arms some days after the use of leeches; and a *light cover* on the inflamed part of the neck and face, consisting of a piece of cotton cloth.

I wish farther to observe, that one of those children, who recovered, had taken *twenty nine*, another *thirty six* grains of *calomel*, a proof how beneficial this medicine is in glandular inflammation, particularly in infants. — Should a phlegmonous tumefaction of the salivary glands happen suddenly to collapse and before a favourable turn has been ushered in by stools and sweat, a *siniapism* must be applied to prevent, if possible, a metastasis to the brain.

51. *Hooping-cough (pertussis).*

The diagnosis of hooping-cough need not be detailed, as the disease is notorious. The cases I had in Java, amounted to about *two dozens*, most of which happened in the months of May, June and July, the time of the sun's lowest alti-

tude and lowest midnight-warmth. The children seized were partly of European, partly of Malay descent and had, with the exception of four, passed the cutting of the milk-teeth. None of them died, though the fits of some were very severe and endured for six weeks. In order to show the intenseness of whooping-cough I may observe, that: *two* of the instances have been attended with spitting of blood (*haemoptysis*), yet without a *crackling* noise of breath discoverable by the *stethoscope*; *two* with crimson and purple *ecchymoses* in the white of the eyes; and *one* with symptoms of *cerebral commotion*. My treatment was the following.

I desired the child's body in the night and in the cool of the morning to be covered with a somewhat warmer dress than usual, forbade the cold bath, but permitted the daily exposure to the open air in shady places. For the *first* or *catarrhal* stage of whooping-cough I prescribed, besides the above, small doses of *sulphur antimonii praecipitatum* and *ipecacuanha* to be alternately taken with moderate doses of *castor-oil*. In the mean while I recommended an *aperient clyster* to be from time to time applied, and every kind of stimulant or exciting food to be rejected. — For the *second* or *spasmodic* stage I in a few cases prescribed *musk*, but could not find that it proved of any real service. More relief appeared to follow from an ointment of

tartar emetic when rubbed on the pit of the stomach, an application which I ordered to be continued, until a sufficient number of pocklike pustules had broken out. Besides, I experienced that the fresh extract of *Datura fastuosa* and *Metel* (Malay: *ketjoobong*), two indigenous plants of Java, was beneficial, in as much as it caused the disease sooner to pass on to its *third* stage, characterized by salutary expectoration. I ordered a grain or two of it to be dissolved in one ounce of fennel-water, a teaspoon-ful of which was given three or five times a day (vd. form. 14 of the Appendix).

52. *Ophthalmia.*

The diseases of infantile eyes, which I met with in Java, were only of an *acute* kind, some secondary illnesses excepted which had followed from an acute inflammation (e. g. ulceration, laceration and opacity of the cornea, projection of the iris and ectropium). The total number of the individuals affected exceeded one *hundred and twenty*, comprehending: *thirteen* new-born sucklings, already mentioned in No. 35; *forty seven* infants, who had not yet finished the cutting of the milk-teeth, mostly white; and *sixty* elder children, also for the most part of white descent.

The two latter classes of patients summed up comprise a number of 107 instances of acute diseases of the eyes, which I could distinguish

into four kinds, as: *blepharophthalmia*, *external ophthalmia*, *dacryocystitis* and *iritis*.

a. *Blepharophthalmia*, in my opinion, had its origin mostly from miasmatical influence, because it occurred not only sporadically, but often also as an *epidemical* disease, especially about the change of the rainy into the dry monsoon. It generally disappeared within eight days, but sometimes continued for four weeks. At its later period it always displayed a *blennorrhoeic* character, though the secretion of the *Meiboomian* glands had been primarily suppressed. The promptest way of accomplishing a cure was: to have the eyes continually defended against luminary stimulation ^{g)}; to enjoin an *antiphlogistic* diet; to avoid *wet* applications; to put *blisters* on the neck, behind the ears or on the upper part of the arms, and to keep them active as long as circumstances required. When the disease had lasted above three weeks and was attended with a copious secretion of mucus, a collyrium of *white* or *blue vitriol* combined with some *laudanum* proved useful, as also the collyrium of *Conradi*, composed of one grain of *sublimate* to six ounces

g) A simple refuge against luminary stimulation within the tropics is to wrap the forehead in a banana-leaf fashioned as an ocular screen, which affords at the same time an agreeable coolness to the eyes.

of distilled water. But if such applications were employed too early, *blepharophthalmia* was likely to be converted into a much more intense *ophthalmia*.

- b. *External ophthalmia* was mostly a primary or secondary attendant on *blepharophthalmia* and in this case more or less confined to the conjunctiva of the eye-ball. It generally continued longer than the former, but never above six weeks, unless it had originally been neglected or mismanaged, in which cases it sometimes happened to continue from eight to ten weeks and ended twice in blindness. Some instances, owing to insolation, biting of insects, the entrance of dust and other external things offensive to the eyes, displayed from the beginning a more dry or pure inflammatory character and required to be combated with: *leeches*, *cooling* and *alleviating lotions* (e. g. pure rain-water or a solution of *sugar of lead* with a trifling addition of gum), *darkening* the room and an *antiphlogistic* diet. — *Leeches* could not always be dispensed with even in those cases, which commenced with a *blennorrhoeic* character, but had taken a worse turn by neglect or a wrong application. Recovery then either followed from their sole use or was completed by a *blister* or one of the *collyria* above mentioned (vd. a.).

c. *Dacryocystitis* (inflammation of the lachrymal sac) occurred only in *seven* or *eight* white children between their second and fifth year. One of them had been suffering from *milk-scurf*, two from *furuncles*. The affection showed itself in an erysipelatous form on the internal corner of the eye, attended with an efflux of acrid tears and *oedema* of the upper eye-lid. Four times it disappeared within a short space of time by being covered with a small bag filled with chamomiles and rice-bran. Thrice, when there had already been made wet applications, before I was consulted, it changed into an abscess having the shape of a bean and containing a purulent matter, mixed with blood and tears. When it burst, the inflammation stopped, but returned periodically until the eighth or ninth year of life, changing each time into an abscess like to that just mentioned, always healing however and never leaving a permanent *fistula lachrymalis*.

d. Of *iritis* I had but *two* cases, both white boys, one thirteen, the other fifteen years old, both having too much exposed their eyes to solar lumination. I treated them after the rules prescribed by European oculists, which would be too tedious to explain here. One of the youths recovered within a month, the other caught a permanent debility of sight, as he

was necessitated often to take a ride into the country, while under my attendance, and thus could in no way avoid exposing himself to the sun, dust and other noxious influences.

B. Affections of the skin.

a. Acute eruptions.

The marks distinctive of acute eruptions I shall pass in silence, as all physicians must know them.

53. Cow-pox (*vaccinellae*).

The cow-pox during the English interregnum was imported from the *isle de France* to Java. Thirty years have now elapsed, and the Dutch government spares neither pains nor expense to keep and propagate a regular vaccination, notwithstanding the small pox appears much oftener there than in Europe. Such, in my opinion, is to be imputed to *five* causes, which are these.

First: *The nakedness of Indian children favouring the scratching of cow-pox.* —

Secondly: *The indifference of Javanese mothers not caring to prevent the cow-pox from being scratched.* —

It may be taken for certain, that one out of two Javanese children, vaccinated, scratch open the cow-pox before mature. Nay, I have known that out of twenty children, who had been inoc-

ulated, only two or three exhibited an uninjured cow-pox, when brought back to the vaccinium after eight days. How much a settled vaccination and the conveyance of vaccine matter to remote places is obviated by this circumstance, requires no explanation.

Thirdly: *two lingering and infectious diseases of the skin, the itch and raspberry-pox*, so very common in some districts of Java, particularly near the sea, that hardly one out of three children escapes.

There is no question, indeed, whether such children must be vaccinated, since we know by experience that the tutelar influence of the vaccine virus is not always counteracted by a chronic disease of the skin. Nevertheless the stuff taken from them is unfit for being transferred, as it might bring on a gradual degeneracy of cow-pox.

Fourthly: *The innate indolence of the Javanese vaccinators*, i. e. individuals of the Javanese or Malay tribe appointed and paid to vaccinate by the Dutch government. —

Without a strict and vigilant European superintendence these fellows but *rarely*, perhaps I should say *never*, perform their duties in accordance with their orders. They commonly are to be blamed for: inoculating with a rusted or blunt lancet; passing over the settled day, when the vaccine matter is most efficacious; exaggerating by false reports the number of vaccinations performed

and lessening the number of those, which have failed; burying in silence an accidental want of cow-pox within their respective districts and a casual occurrence of small pox at particular places, with a view to escape reproach.

Fifthly: *The unfitness of some Javanese vaccinators to distinguish genuine from pseudo-cowpox*, whence it comes that neither at all times, nor in all places, are children vaccinated with good matter. —

The two latter causes, however, are only topical in those districts of a province, which are out of the way and too rarely seen by the inspector of vaccination, who resides in the main district and is at the same time a medical practitioner. In those districts, which he can readily inspect, vaccination is executed with more skill and greater accuracy, on which account small pox less frequently occurs there.

The direction, which is given by European authors for practising vaccination, would perhaps be better suited to tropical countries, if performed in the following manner.

- a) To inoculate only early in the morning, if possible, for this reason the human frame is then more susceptible of being infected by vaccine virus, than in the later hours of the day.
- b) To take matter from such cow-pox as has attained to the *ninth* morning, for it seems

to me, that tropical heat somewhat retards the maturation of cow-pox, though it accelerates their exsiccation.

- c) To make a deeper incision on *black* than *white* skins, as the cuticle of the former is thicker.
- d) To make more incisions on *black* than *white* skins (e. g. from five to six on each arm), as the reaction of the former is less.
- e) To have the arms of *black* children washed with tepid water, a little while before making the incision.
- f) To exhort *black* mothers to prevent the cow-pox from being scratched or broken.
- g) To practise an *inoculation of trial* on the fifth or sixth day in all dubious cases, to see whether the first vaccination has been made with genuine matter, and thus to take one's measures accordingly.

The *white* families in Samarang got their children generally vaccinated by myself. *Five* cases have occurred to me: of white children apparently healthy, and without any trace of small pox, who could not be infected, though inoculated with good stuff three or four separate times; *eight* or *nine* cases: of white children affected with a common *catarrhal* fever, in whom the cow-pox did not appear until two or three weeks after inoculation, and nevertheless afterwards held on their usual progress; *two* cases: of a miliary eruption

(*psydracia vaccina*), supervening on genuine cow-pox of a white child, but which remained only a few days, nor did it lessen in any way the pustules ingrafted on the arms.

Lastly, I would observe, that vaccine matter within the tropics cannot be so long preserved from corruption or becoming innocuous, as in temperate climates. This then is the reason, that when conveyed to remote islands it rarely produces the desired effect.

54. *Small pox (variolae).*

In the district of *Samarang*, where a regular vaccination took place under my inspection once or twice a week, I only met with four cases of small pox during a space of twelve years: *one* on a mongrel white child three years old, who had not been vaccinated; *three* on Indian children, who very likely had no genuine cow-pox, and two of whom were above three years. One of the latter died at the *third* stage of the disease. — My method of cure was very simple, including: first, an *antiphlogistic* regimen (i. e. a fresh air, thin dress, cool drink and no solid food) throughout the irritative and eruptive stages; secondly, a *purge* of cream of tartar or tamarinds with manna, or instead of it a usual *clyster*, in case of constipation at the beginning of exsiccation; thirdly, some precaution against catching cold during the exsiccative stage.

In the districts more remote from *Samarang*, where the practice of vaccination was committed to fifteen Javanese paid by government, but whose conduct I could not sufficiently superintend, two *epidemical* invasions of small pox appeared during my stay in office, without counting the *sporadical* occurrences generally kept secret. Though neither of those epidemics continued long, yet more than *fifty* Javanese children partook of the one, and not less than *thirty* of the other. The mortality at each time was as *one* to *five*, but would no doubt have been less, did not the Javanese without distinction of cases apply cold affusion or immersion to patients in the first or second stage of small pox (vd. B. I. P. I. Chap. 3. b. Metastasis of small pox to bones).

55. *Modified small pox (varioloidae).*

Should small pox break out on an individual, who has had the genuine cow-pox, we call them „*modified*“, as they will pass without danger to life, though hardly discernible from „*genuine*“ in their first and second stages. Experience has also taught, that modified small pox can bring on genuine, if seizing such persons as have had no true cow-pox.

The number of children whom I attended for this eruptive form, amounted to about *fourteen*, including: two mongrel sucklings, who had been vaccinated but a few weeks before, and sev-

eral youths of different races, who were said to have had cow-pox twelve or fifteen years previously. They all recovered. — My treatment was the same as in genuine small pox.

56. *Chicken-pox (varicellae).*

Chicken-pox, from a difference in form called also *water, wind, sheep, stone-pox* etc., and which cannot be prevented either by small or cow-pox, occurred about *ten* times in my Java practice. The individuals seized were genuine and mongrel white children of different ages, none of whom died. — My practice was nearly the same as in small pox.

57. *Shingles (zona).*

Shingles occurred *three* times: once on the neck of a Creole suckling six months old, who had been subject to scurf on the face and soon after caught a vesicular eruption; another time on the face of a mongrel white child, one year and a half old; and the third time on the face of a mongrel white child three and a half years old. The eruption was preceded by a slight fever. The clusters of blotches remained about two weeks, before becoming exsiccated and covered with a brown crust, which dropped successively and for a time left bleached spots. — My precepts were limited to: restriction of food and gentle purges of *castor-oil* or *cream of tartar*

with *magnesia* and an addition of *sulphur antimonii praecipitatum*.

58. *Measles (morbilli)*.

Measles are as common, perhaps more common in hot than in temperate climates, yet of a milder character there than here. The cases I met with in Java, amounted to *sixty six*, most of which occurred in the months of May, June, July and August, the same period in which *hooping-cough* reigned (vd. No. 51 supra). The subjects seized in part appertained to the white race, in part to the mongrel tribe and in part to the brown or Malay race. *Two* of the number were sucklings, one of whom was at the same time affected with *measles* and *furuncles*; *five* infants between one and four years old; *fifty eight* children more advanced; *one* an adult.

Event and treatment.

In *fifty one* of the cases in question the disease passed in a very benign and regular manner, the irritative fever lasting but two or three days; the concomitant symptoms (cough and ophthalmy) not being severe; the measles fading away three days after eruption; the cuticle then exfoliating, but renewing itself so promptly, that the patients could be pronounced cured four or five days after. My precepts in these fifty one cases were confined to: a) an *antiphlogistic regimen* in the ir-

ritative and eruptive stages of the disease (i. e. I recommended a cool room, light dress, mild drink without solid food, in particular *cocoa-water*, *orange-sap*, *canary-emulsion*); b) some precaution against catching cold at the exfoliative stage of the disease (in other words, I desired the room to be kept, the windows to be shut up during the night, some warmer clothes to be put on and cold bathing to be forborne for a week after the disappearance of the measles).

Three cases were distinguished by a longer irritative fever and more alarming appearance of the eruption, to be imputed, as I supposed, to an accumulation of worms within the intestines, which induced me to order a teaspoon-ful of *castor-oil* now and then to be given and *clysters* of milk, honey and water employed. —

In *two* cases fever and gastric disorder continued, after the measles had disappeared, consequent on an excess of food taken in the two first stages of the disease. Aperient clysters, a potion of *gummed castor-oil* and a few doses of *calomel* redressed the matter.

Once, when a *bloody flux* had followed from a premature disappearance of the eruption by catching cold, I recurred to an immediate application of *sinapisms* and *blisters* combined with moderate doses of *calomel* and *sulphur antimonii praecipitatum*, which was successful. — The same practice was applied to three cases of an *asth-*

matic affection, which had followed from the same cause. *Two* got cured and *one* ended fatally, even although two leeches had been applied but a few days before death. The latter case was a child five years old.

Six patients having caught cold at the third or fourth stage of measles were seized with a *purulent diarrhoea*, which appeared on a sudden and resisted every means of cure (B. I. P. I. Chap. 2. A. b. 4.).

59. *Red measles (rubeolae).*

This eruption is known to be intermediate between measles and scarlet-fever. I met with it but *twice* in Java: once on a white child four years old, another time on a mongrel white child six years old. The irritative fever went on longer by a few days, than in measles, and was attended with *ophthalmia* and slight *sore throat*. The eruptive spots appeared here and there rising to miliary protuberances filled with a lymphatic humour. The cuticular exfoliation dated from the fourth day after eruption and continued about a week. My practice was almost the same as in measles. One of the little patients, who had taken too much food, fell into a slight cutaneous dropsy (*anasarca*) at the exfoliative stage of the disease, but soon recovered from the use of castor-oil, some doses of *calomel* with *sulphur antimonii praecipitatum* and a *blister* put on the belly.

60. General redness (*phoenignus*).

This appearance perhaps might be better inscribed „pseudo-scarlet eruption“, as neither of the two cases, which I had of it (viz., one on a Creole child *ten*, and another on a mongrel one *seven* years old), was attended with fever or sore throat, and in both the redness disappeared in three days without either leaving a vestige or any ill consequence. In fine, I prescribed a purge of *cream of tartar* and *magnesia*.

61. Nettle-rash (*urticaria*).

We distinguish between two kinds of nettle-rash: a common (*urticaria vulgaris*) and the porcelain-fever (*essera*). Of both I met with some instances on youths between eight and fifteen years old, but only among the white and mongrel white races. The eruption generally disappeared in four days without cuticular exfoliation or any uneasiness left. Its decline was promoted by an *antiphlogistic* regimen and cooling purges of *cream of tartar*, *Seidlitz powder* etc.

b. Chronic eruption.

62. Scald-head (*linea capitis*).

Of scald-head I knew *four* instances in Java: one of a white child above two years, and three of mongrel children between their third and fifth

year. None was of such importance as to require medicinal redress.

C. Affections of the urinary organs.

63. *Incontinence of urine (enuresis nocturna).*

Urine involuntarily voided in nocturnal sleep is not to be deemed morbid but when occurring in more advanced infancy (vd. B. I. P. I. Chap. 9. A. 1.). — A Creole boy three years old (who had returned from Europe with his parents) involuntarily passed his urine in the night, nor was he even in the day, when awake, able perfectly to retain it. He was relieved by a flannel fillet swathed round the belly and a pair of cotton trousers worn in the night. — The same expedient, supported by the use of warm hip-baths (*semicupia*), proved useful to a Creole girl twelve years old, who was also afflicted with incontinence of urine, though in a less degree.

64. *Gravel and stone in the bladder (lithiasis urinaria).*

A mongrel white boy five years old, whose excretion of urine was painful and obviated by gravel, recovered by the internal use of *cocoa-milk* diluted with the water of almost ripe coconuts. — A mongrel white girl two and a half years old, who was very ill of strangury, recovered after she had voided by urine some light-

brown stones of considerable size, under the use of an infusion of *daun pitjitan*, the leaves of an indigenous plant of Java, the botanical name of which is unknown to me.

65. Slimy urine with blood (*blennuria cruenta*).

A mongrel white boy, eight years old, expired after having suffered from slimy urine for a period of two years long. My aid was solicited but eight days before death. I discovered that the voided urine was neither excessive in quantity, nor peculiar in smell, but always turbid and of a whitish colour, at times tinged with dark blood. *Lumbar* and *hypogastric* pain did not appear to exist, but hectic fever had commenced, and prostration of strength already had attained to such an extreme, that I knew not what to prescribe beyond some *cordials*. Whether the disease had been seated in the bladder or in the kidneys, could not be decided as I was not allowed to dissect the body.

66. Consumption of the bladder (*phthisis vesicalis*).

The only instance of this diseased form, which I met with in Java, occurred in a mongrel white boy five years old, at the same time troubled with worms and previously afflicted with a dysentery, for which he had taken many wrong medicines. He died suddenly after he had laboured four months under periodic fits of dysuria, which

was at length attended with a voiding of bloody pus by urine. On dissecting the body I found that the neck of the bladder was perforated by suppuration. — Detailing my treatment would be to no purpose, as it had but too often been interfered with by the private intervention of a Javanese *dookoon* (quack).

D. Intestinal worms.

The only certain proof of worms existing within the intestinal canal is their being now and then voided by stool or, which happens more rarely, by the mouth. All other appearances, by people deemed symptomatic of their presence, are more or less fallacious in themselves, as they may be referred to other causes also. I purposely observe this, having so often known Indian mothers ready to give *anthelmintic* medicines, whenever they perceived their children pick their nose or have blue rings below their eyes etc. — The various kinds of worms, which I observed in infantile stools in Java, have been: the *maw-worm*, the *hair-tailed* worm and the *long round* worm, the latter being sometimes discharged by vomiting. The *tape-worm* I never observed.

67. Maw-worm (*Ascaris vermicularis*).

This sort of worm occurred among every race of children, chiefly in the first year of life, the symptoms of it being confined to an uneasy

tickling or itching at the anus, which contributed to keep this part inflamed, if already so. The best remedies for it proved to be some *castor-oil* taken in teaspoonful doses, and a decoction of *garlic* in milk, used for the purpose of cleaning the anus after an evacuation.

68. Hair-tailed worm (*Trichocephalus dispar*).

Hair-tailed worms I saw discharged by *four* little patients, whom I attended: once by a mongrel child eighteen months old and suffering at the same time from a mucous diarrhoea; thrice by genuine and mongrel white children more advanced and affected with a malign dysentery. One of the latter expired. — My prescription consisted of *gummed castor-oil* and *calomel*, which are in my opinion the least hurtful in expelling hair-tailed worms, whenever their existence is attended with an inflammatory affection of the large intestines. Perhaps to rub the belly with *petroleum* might be coadjutant.

69. Long round worm (*Ascaris lumbricoides*).

Oftener than with the two former I had to do with the long round worm, which encamped by preference in orphans and children of indigent natives, of all races and ages, save that of the new-born state. The principal cause productive of this complaint, and very prevalent

among the children now mentioned, was their being surfeited with sticky and hard kinds of vegetable food, as: rice-bread; pastry of *Oryza glutinosa* (Malay: *Katang*); toasted earth-nuts (*Arachis hypogaea*, — Malay: *Katjang goreng*); toasted Indian corn (*Zea Mais*, — Malay: *yagong*); the raw root of *Dolichos bulbosa* (Malay: *bankoan*); the toasted seeds and nuts of *Artocarpus pubescens* (Malay: *bndaa*), *Antidesma pubescens* (Malay: *mlenyo*), *Castanea Javanica* (Malay: *serangan*); the fruits of *Psidium pomiferum* (Malay: *goyaves* or *yamboo bedje*) etc.

Calculating the number of those sick children, whose intestinal canal appeared to harbour long round worms, to have been *eighty*, an estimate by no means exaggerated, I wish to arrange their respective illnesses as follows.

Twenty two lay in a fever with *gastric* symptoms, as: nausea, vomiting, colic, diarrhoea, costiveness, distention of the belly etc. A spare diet, *castor-oil* pure or mixed with gum and *sweet clysters* (of honey or sugared milk and tepid water) always sufficed to subdue this fever in a short time, and if I then thought that a more effectual medicine was necessary to expel the long round worms, I administered a powder consisting of: *semen santonici* (wormseed), *radix valerianae*, *radix jalappae* and *flowers of zinc* (vd. form. 15 of the Appendix), but only to such children as had fully passed the cutting of the milk-teeth.

The effect of this powder it seemed was but little influenced by lunation.

Thirty three were in an *atrophic* state without fever and more or less characterized by: a distended abdomen, emaciated limbs, costive bowels, a foul tongue (which was sometimes covered with a kind of scurf), dilated pupils and cachectical complexion. The majority of the patients had passed the third year, a few had not. My prescription for the latter was limited to the use of *castor-oil*, frequent exercise in the open air, river-baths and a light digestible food. The former took, moreover, the *anthelminthic* powder before mentioned (vd. form. 15), by which more than a hundred long round worms were sometimes discharged within two days, and afterwards the health improved in a striking manner. *Two* little ones, however, extremely emaciated when they came under my care, expired a week after they had taken the above powder, perhaps from too rapid an evacuation of their bowels, which had been long obstructed and distended.

Seven had a *mucous diarrhoea* without fever, but were cured by small doses of *castor-oil*, often repeated, and a light digestible food. —

Eight a had *chronic dysentery* or bloody flux, which was treated after the principles explained in No. 39 of Sect. II. — Three of these died. —

Ten were at the last extremity in a *purulent*

diarrhoea or other fatal diseases, when they ultimately passed several long round worms.

F o u r t h S e c t i o n .

Morbid conditions less frequently met with in childhood than in full age.

A. F e v e r s .

a. *Agues (intermittent fevers).*

Agues, during my stay in *Samarang*, were more prevalent in the dry than rainy season, a consequence, I think, of the south-east landbreeze, which blows there in that season and takes up noxious damps in its passage over a long tract of marshy rice-fields. In 1832 a chain of new coffee-plantations was founded in the southeast environs of *Samarang*, from which period agues grew rarer.

The number of the *infantile* subjects, whom I attended for agues in *Samarang*, amounted to *seventy three*: eleven being sucklings between six and twelve months old; ten being in their second and third year; the rest older. As to race the patients differed not much in number.

As to the character of the fever: 29 cases of ague were attended with *catarrhal*; 40 with

gastric-bilious and 4 with *cephalic* (soporose and convulsive) affection. The latter form of agues ended *twice* in death, the former never.

70. *Catarrhal ague.*

It often reigned at the same time with *measles* and *hooping-cough*, displaying a regular quotidian or tertian type and ending sometimes in three or five paroxysms, sometimes going on longer. Recovery was ushered in: partly by increased perspiration, sometimes concurring with a transient pustulous or herpetic eruption about the mouth or on other parts of the body; partly by increased secretion of nasal mucus; partly by increased intestinal excretion or stools more liquid; partly by altered secretion of urine, provided a reddish sediment discovered in the urine of some older children may pass for salutary. — My precepts tending to bring on or promote a favourable *crisis*, consisted: 1) of a frugal diet; 2) medicines to rouse the activity of the skin, as: *sal ammoniac*, *liquor ammoniae acetatis*, *sulphur antimonii praecipitatum* and *blisters*; 3) medicines to favour intestinal secretion, as: *River's potion* (citrate of potash), *Seidlitz powder*, *castor-oil*; 4) *sulphate of quinine* to complete the cure, but which was not required in all cases. When used, I ordered a grain to one ounce of sirup, to be taken in teaspoons by infants one or two years old.

71. *Gastric - bilious ague.*

Was of the same regular *quotidian* or *tertian* type as the former, but generally lasted longer, especially in children accustomed to a bad diet. Recovery from it was ushered in by feculent bilious stools always concurring with an increased perspiration, sometimes with furuncles. My practice consisted of: 1) a spare diet; 2) medicines to favour intestinal and bilious secretions, a purpose, which I fulfilled with *castor-oil* and *calomel* for tender infants, with *cream of tartar*, *senna leaves* and such like for older children; 3) *blisters* applied to the pit of the stomach; 4) *sulphate of quinine*, yet never prescribed without previous purgation or the addition of some purgative. —

The cold bath was forbidden in all cases of catarrhal and gastric-bilious ague, not only during the disease, but also for a while after. — In case I prescribed *sulphate of quinine*, I was accustomed to increase the dose towards new and full moon, having observed that the fits of tropical agues then became aggravated and returned at shorter intervals.

72. *Cephalic ague.*

This was of a less regular and more masked type. — One of the four affected subjects, above mentioned, was a mongrel suckling, eight months

old, seized with two fits in one day, who expired on the fourth, after I had already applied leeches, cold affusions to the head and some evacuant medicines, but before I had had recourse to *quinine* (with *opium*?). — The other three were: a Creole child three years old, and two mongrel ones, six and eight years old. The former, hardly cured of a dysenteric affection when struck into a cephalic ague, expired in continued convulsions about two weeks after the first paroxysm. The disease, perhaps, might have taken a better turn, if *evacuants* instead of *antispasmodics* had been combined with the use of *quinine*. The two latter, whose fever had commenced remittent, but came to no crisis within four weeks, recovered after a pretty large use of *calomel* and cold affusion to the head, followed by some doses of *sulphate of quinine*.

b. *Remittent fevers.*

Among these are: first, the inflammatory affections of the chylopoetic system mentioned in A. No. 36, 37, 38 of Sect. II. and A. No. 49 and 50 of Sect. III.; secondly, the acute eruptions mentioned in B. a. No. 54, 55, 56, 58, 59 et 61 of Sect. III.; thirdly, the *common catarrhal* and *soporoid bilious fevers* to be treated of in this Section.

73. *Common catarrhal fever.*

It is called „*influenza*“ when it occurs epidemic, which generally happens once a year in Java, especially at the change of the rainy into the dry *monsoon*. — I attended for it above one *hundred and twenty* children, including: 21 sucklings from five to twelve months; 25 from one to three years old and 74 more advanced. As to race, there was no great difference in the number of the affected little ones. The appearances of the fever in its origin, were: catching cold, cough, sneezing, pain in the ears, pain in the eyes, lachrymal flux, hoarseness and painful deglutition; the symptoms supervening, especially to children who had not passed dentition or took too much food: asthma, thrush, colic, tenesmus etc. Two cases terminated fatally, principally from the latter cause, whereas all the others recovered. The convalescence sometimes dating from the second or third day, but generally one or two days later, was ushered in by: the return of perspiratory and nasal excretion, expectoration of mucus, looser stools and sometimes a kind of a red-coloured miliary eruption. —

My mode of cure was simply as follows. I forbade solid food and cold bathing; I ordered a light dress and fresh air; cool drink (e. g. *cocoa-water* and *canary emulsion*); a clyster or gentle purge for constipation; tepid oil to be

rubbed into the nostrils for nasal obstruction; and a blister to the chest or abdomen for asthma, cough and colic.

74. *Soporoid bilious fever.*

The *soporoid bilious* fever is not to be confounded with a *simple cerebral* fever, which is a disease dependent on organic growth and prevalent among white infants, who are in their third year (vd. No. 46), whereas the former originates from miasmatical influence and prevails in the marshy lowlands of Java, especially during the rainy season. Its principal characteristics are: anomalous exacerbations, an irregular pulse, frequent variation of cutaneous warmth, topical perspiration, sopor, delirium, anxiety, periodic screeching, suppressed secretion of bile, an icteric hue of the eyes etc. In more advanced childhood the disease generally continues above, in tender infancy under *three* weeks (vd. No. 38).

Of older children I had but *eight* to attend for this fever, which is less frequent in *Samarang* than in *Batavia*. They were partly of genuine, partly of mongrel white descent; one expired, the other seven recovered. The recovery originated with copious stools of a feculent bilious kind, and a general perspiration, at first periodic, but afterwards becoming constant. Three children, when already convalescent, caught moreover furuncles.

My method of cure was energetic, com-

prehending, besides an *antiphlogistic* regimen (cool air, light dress, mild drink and little food) the use of:

leeches;

cold affusion to the head;

calomel, *castor-oil*, *aperient clysters*; and
blisters.

Leeches and *cold affusion* formed the preliminary, *calomel* the intermedial and *blisters* the final act of the cure. Of *calomel* I ordered one or two grains to be dispensed for a dose, which was taken from three to five times a day, until it affected the gums. I generally had it combined with some *sulphur antimonii praecipitatum*, and in two cases, when the fever turned to ague, after it had continued three weeks and the patients had already consumed *forty* grains of *calomel*, I added to the latter a few small doses of *sulphate of quinine*, which brought about a copious salivation, concurring with bilious stools and a general perspiration, which cut off the fevery exacerbation.

75. *Sun-stroke (siriasis).*

This affection, which follows from the influence of a vertical sun on the naked head, strictly speaking, should not be ranked among remittent fevers, but could not be placed more opportunely. It means an aching pain in the crown of the head, not rarely attended with de-

lirium and fever. I met it upon *two* Creole boys, one of whom was seven, the other nine years old. They both recovered within three or four days by the application of *leeches* and *cold affusion to the head*, combined with a copious use of *cooling drink* (lemonade).

Adult Europeans affected by insolation within the tropics are often struck into actual *phrensy*, which necessitates us to bleed and apply the utmost cold to the head. For the latter purpose I recommend fresh *cocoa-water*, which is colder than common river and well-water, or a compound of:

6 parts of *sulphate of soda*,

4 parts of *urias ammoniae*,

and 2 parts of *nitras potassae*

with *six* parts of common water, which produces a cold much more intense, than is effected by the usual application of Dr. *Schmucker*.

B. Excessive and suppressed secretions.

76. Asiatic cholera.

Cholera is one of those diseases at times appearing in Java as an epidemic. The last universal epidemic there commenced in 1820, if I am rightly informed, and was near its close when I arrived in 1823. The characteristics of the disease I pass over in silence, as they have already been often enough described. Its coming

on, in my opinion, was more rapid in Java than in southern Germany, where I observed the cholera in 1837.

The number of the infantile individuals, whom I attended in Java for cholera, amounted to *thirteen*, exclusive of the two sucklings mentioned in No. 25 of the first Section. *Four* were of Malay-Javanese, *nine* of genuine and mongrel European descent. *Eight* had passed the period of teething, *five* had not; of the former only three escaped death, of the latter none.

The means of cure, to which I had recourse, were the same as were in vogue among the European physicians then stationed in Java, for outward application: the *warm bath*, *leeches*, *spirituous* and *aromatic embrocations*, *mercurial frictions*, *blisters*, *sinapisms* and *warmed blankets*; for inward use: *aromatic infusions*, *spirit of harts-horn*, *peppermint-oil*, *musk*, *laudanum* and *calomel*. Whether or not these remedies, or a part of them, are indeed to be relied on in the treatment of Asiatic cholera, if prescribed in due time and in a proper manner, I shall not examine. Provided, however, they are, there is no doubt of their having been applied too late to some of the cases above mentioned. Neither should I omit to say, that more than the half of the thirteen children had subsisted on and had been surfeited with bad food until the day cholera seized them. This particularity, which I often did not detect

till after death, induces me to propose the question as to whether or not an *emetic* on the first approach of the disease might not have been useful to such children. Had the number of infantile patients, whom I had to attend for cholera, been greater, I am certain I would have tried this method, mindful of the old sentence „a desperate complaint requires an extraordinary remedy.“

77. *Choleric diarrhoea (choleroïda).*

Such a gradual difference, as is observed between *genuine* and *modified* small pox, seems to exist between *cholera* and *choleroïda*. The latter means a spasmodic diarrhoea suddenly commencing with wheyey stools, affecting the hands and feet with cold, and lessening in some degree the strength, but without vomiting, cessation of the pulse, loss of the voice, extreme weakness, apathy etc.

During my stay in Samarang *choleric diarrhoea* occurred twice as an epidemical interlude, continuing only two or three days, owing, it appeared, to a sudden change of the weather: once in 1824, when a thunder shower broke out after a long continued dryness of the atmosphere; another time in 1826 at a like atmospherical change. The first time, besides a considerable number of adult subjects, *seven* children of different ages (the youngest being in its third year) were nearly at the same time seized with chol-

eric diarrhoea; the second time only *four*. All eleven recovered within less than thirty six hours by taking a mild infusion of the bark of *Cinnamomum Sinto*c, combined with frictions of any tepid oil on the belly.

78. *Bilious vomiting.*

I do not intend to speak here of such kind of bilious vomiting, as is the consequence of bad diet, but of that which is to be derived from unknown atmospherical changes, and stands in the same relation to cholera, as *chicken-pox* does to *small-pox*. It comes on suddenly, but ceases in a few hours, unless concurring with some other gastric disorder. Fever, cold extremities, spasms and other critical symptoms are absent.

In my Samarang journal I have noted three epidemic occurrences of *bilious vomiting*, each continuing but some days. One happened in May 1825 at the change of the wet into the dry monsoon; the second in May of 1826; the third in August of 1831. The affected children, about *thirty* in number, belonged for the most part to the white and mongrel white races, the youngest was two years old. *Twenty six* recovered within a day by the use of *River's potion*, prepared of fresh lemon juice and purified potash; one of the number vomited bile with blood. *Four*, troubled with previous constipation of the bowels and

worms, recovered later by the use of *castor-oil*, *calomel* and *aperient clysters*.

79. *Jaundice of adults.*

How to distinguish between jaundice of new-born children and jaundice of adult persons, we already know (vd. No. 18 of Sect. I. B.). The symptoms of the latter are met with also in children somewhat advanced in life, as *thrice* happened in my Indian practice: *once* in a Creole child three years old, and *twice* in mongrel children three and four years old. One of the little ones had not long previously been affected with itch. All three were distinguished by torpid, clammy and light-coloured stools, but exempt from fever and pain, nor deprived of appetite. The icteric state passed away after three or four weeks, by a frugal diet, tepid baths and mild purges (as, *rhubarb* with *magnesia* and *cream of tartar*; *calomel* with *sulphur antimonii praecipitatum*). The little one, who had been subject to itch, used, besides the above, a revulsive ointment of *cantharids* and *tartar emetic*.

C. Chronic eruptions.

80. *Tetters (herpes).*

The herpetic eruptions, which I observed in Java, were reducible to three varieties, as: the dry or farinaceous tetter (*h. farinosus*), the humid

scaly or miliary tetter (*h. phlyctaenodes*) and the annular scurvy tetter (*h. circinatus crustaceus*).

The *first* variety, which occurred on a few white infants, who had hardly passed dentition, was no object of medical treatment. —

The *second* variety, which occurred on *four* white, and about as many mongrel children of different ages, could not without risk be dispelled by topical remedies. Once, when the mother of a child three years old had obtained this effect by her private quackery, immediate death was the consequence. — Another time, when a mother had prevailed on me to combine my internal treatment with a topical, in order sooner to remove the eruption, which covered the face and neck of her child, vehement convulsions ensued which did not, however, terminate fatally, as the eruption, almost gone, was happily restored by a prompt application of warm poultices. This child had not yet passed its first year, and had taken too much food. — A third case, which I had treated more than a month with internal medicines, and afterwards with external applications (e. g. the *liquid natrium chloratum* and a solution of *blue vitriol*), was only imperfectly cured. For, six weeks after the eruption had disappeared, it returned in the form of a herpetic ulcer to its primitive seat, the legs, and obstinately resisted every effort to cure it, until at length it was subdued by nature. — *Five* cases of scaly tetter were rad-

ically cured in four or five weeks by the internal use of a powder, compounded of: *aethiops antimonialis*, *magnesia* and the root of *Asclepias gigantea* (Malay: *wudoori*), an indigenous plant of Java (vd. form. 16 of the Appendix). —

The *third* variety or *annular scurvy* tetter (ringworm); which I met with on six older children and several adult persons of different races, is deemed infectious by the people of Java, but can be cured by topics without fear of any ill consequences, though I confess never to have succeeded with a European application (e. g. *liquid natrium chloratum*, solution of *sublimite*, *blue vitriol* etc.). I was therefore several times obliged to follow a landbred practice, which proved much more effectual. This consists of nothing else but to scrape off with a bambo knife the crust formed on the diseased skin, and then to have the parts repeatedly rubbed with a compound prepared of vinegar and the powdered root of *Justicia nasuta* (Malay: *trebe djepan*).

81. Itch (*scabies*).

Though *itch* exhibits itself differently on black and white skins, yet it does not require a different treatment. — My observations in Java led me to suppose, that itch is sooner curable and less inclined to *metastasis* under the influence of a constantly warm, than variable and cold atmosphere. Notwithstanding I knew two mongrel

children, one three, the other four years old, catch a *bloody flux*, when freed from itch by an outward application, nor did they recover, until I succeeded in restoring the eruption to the skin by tepid baths and sinapisms.

82. *Venereal eruption.*

A Creole child two years and a mongrel child one and a half year old, who both had been suckled by venereal nurses and affected by a primary chancre on the lips, afterwards exhibited an eruption of purple spots, which appeared, in slow succession and without symptoms of internal distemper, on various points of the surface, even on the nose. As the spots did not seem to vanish of their own accord, I desired a sirup to be prepared of a strong infused decoction of *sarsaparilla*, which was administered daily throughout a month but without the least success, perhaps, because the root was not genuine. A *mercurial* treatment then followed, which restored both infants to perfect health. They took every other day an increased dose of *calomel*, during five weeks. The total number of the doses was *eighteen*, the first not exceeding $\frac{1}{10}$ of a grain, each next rising by $\frac{1}{10}$, so that the last amounted to $\frac{18}{10}$, and upon the whole $17\frac{1}{10}$ grains of calomel were consumed. Cold bathing was of course suspended as well during as some weeks after the cure.

83. Raspberry-like eruption (*framboesia sive lues Indica*, Malay: *pattea*).

This eruptive form, known under the name of *pians* and *yaws*, is a disease peculiar to the torrid zone. It appears in the shape of granular, warty, spongy and ulcerous excrescences, which are little or not at all painful, lingering for a long but uncertain space of time and leaving bleached spots, seldom scars, on a dark skin. Once seen, they will be easily known again. Destroyed by topics they are not unfrequently followed by intumescences of the bones, bloody diarrhoea and atrophy. Whether the disease prevails in childhood, I am unable to say, as in Java I knew as many adult persons as children affected with it. Neither can I certify, whether or not its coming is always secondary to a precedent fever, bone-ache and other symptoms of general sickness, as some authors suppose it to be, because most of the cases, in which I was consulted, were of an old date. But of this I am convinced, that it is propagated by contact and more partial to a black than white skin.

As to the treatment, I found that *antimony*, *sulphur* and *sarsaparilla* were useless and *mercury* only aggravated the disease, whereas by the internal and outward use of *copper*, tried in a later period, I succeeded in fourteen cases thoroughly to cure the disease without any injury to

the system. The period of cure commonly lasted from two to three months, sometimes more, but was only practised on such children as had passed the fifth year of life. For the internal use I chose the *liquid muriate of copper*, prepared after the manner of *Goelis* (vd. form. 17 of the Appendix); for outward application the *oxymel aeruginis* (unguentum Aegyptiacum).

The *liquid muriate of copper* I ordered to be diluted with distilled water in a threefold proportion, as: for children between *five* and *ten* years old in the proportion of *one* scruple to half an ounce; for those between *ten* and *fifteen* years old in the proportion of *one and a half* scruple to half an ounce; for older persons in the proportion of *two* scruples to half an ounce. This dilution was taken immediately after a usual meal, one dose every other day, the first being one drop, each following had a drop added. If patients vomited before perfectly cured, I desired them to discontinue the remedy for some days, but afterwards to begin again to take it, increasing the dose in the manner just described, until a few weeks had elapsed after the complete disappearance of the raspberry-like excrescences.

The *oxymel aeruginis* was not applied until the internal use of copper had been continued for about four weeks. I then caused a dossil of lint, copiously daubed with it, to be put on the excrescences and fastened with sticking plaister

or a roller in case of necessity. This application was daily renewed, until the diseased spots had been covered with a new and sound cuticle.

84. *Leprosy.*

Pathologists distinguish between an *eastern* and *western* leprosy, both to be considered as the original types of several later modifications. To those of the former belong the *white* and *knobby* leprosy (*leuke* and *elephantiasis*). — The *white* leprosy is not quite unknown among the coloured population of Java, especially of Malay descent, as also among Arabian and Moorish descendants settled there. More common, however, is the *knobby* modification, which I met with not only among the above tribes, but also in Chinese and mongrel European individuals. *Two* of the latter were orphans and discharged from the hospital, in order to prevent the spreading of the disease; but they were removed too far from my domicile as to allow an eager and steady effort of cure. The younger had not passed its third year.

A p p e n d i x .

**A formulary of medicines, which
proved very useful for children in
my Java practice.**

1.

Solutio gummosa cum oleo ricini.

Rec. Gummi Arabici pulv. ʒij.

Olei ricini ʒβ - j - jj.

Aquae fontanae

(or, Aquae foeniculi) ʒj - jj.

M. S. One, two or three teaspoon-fuls every
1, 2, 3 or 4 hours.

In the later period of my practice in Java I substituted the *Indian gum* for *gum Arabic*, when I had occasion to order an oleaginous portion to be prepared. That gum is got from a tree called in Malay „*bohon kooda kooda*“ and bearing the character of *Amyris Protium* Linn. — One part of it to eight parts of water, with a twentieth part of sugar, affords a gluey mucilage much to be recommended against chronic diarrhoea. Vd. B. II. Sect. I. No. 24. etc.

2.

Infusum herbae Ocymi gratissimi.

Rec. Herbae ocymi recentis conc. $\text{℥}\beta$ -j.

Digere cum

Aquae fervidae q. s.

per horae quadrantem.

Colatura $\text{℥}\text{ij}$ expressa

S. Mouth-wash.

The Malay name of this herb is „daun sel-
asse.“ Vd. B. II. Sect. I. No. 26.

3.

Infusum foliorum Abri precatorii.

Rec. Foliorum abri recentium conc. $\text{℥}\beta$.

Ebulliat cum

Aquae fontanae q. s.

Colatura $\text{℥}\text{ijj}$ -jv expressa

S. Mouth-wash.

The Malay name of these leaves is „daun
saga.“ Vd. B. II. Sect. I. No. 26.

4.

Electuarium cerae.

Rec. Cerae flavae rasae $\text{℥}\beta$.

Olei olivarum

(or, Olei coci recenter cocti) $\text{℥}\beta$.

Liquescant, et ab igne remota agitentur, donec fere refrixerint. Dein admisce in mortario lapideo

Syrupi gummosi rec. parati 3j.

(Lapidis calaminaris subtilissime pulverati gr. ij-ijj.)

M. S. Half a teaspoon-ful to be applied to the lips and tongue, several times a day.

An older child must take more. — It will be well, if this composition is gently warmed always before applied. Vd. B. II. Sect. I. No. 26. Sect. II. No. 39 and 43.

5.

Potio cerae.

Rec. Cerae flavae rasae 3β.

Saponis medicati exsiccati rasi gr. vii.

Aquae destillatae 9j.

Liquescant leni igne assidue agitando, donec invicem coëant. Effusis dein in mortarium lapideum sensim admisce

Aquae destillatae 3jjj.

Sacchari albi 3β.

M. S. Two teaspoon-fuls to be given to younger children, half a tablespoon-ful to older children, every 2, 3 or 4 hours.

Sometimes I chose a gentle aromatic infusion, instead of simple distilled water, in preparing

the above potion, e. g. an infusion of the leaves of *Ocimum gratissimum* (Malay: *daun selasse*) or of *Ocimum Basilicum* (Malay: *daun komanghi*). Vd. B. II. Sect. I. No. 26. Sect. II. No. 37 and 39.

6.

Emulsio seminis Canarii communis.

Rec. Seminum canarii decortic. $\mathfrak{z}\beta$.

Sacchari albi \mathfrak{zj} .

Contunde in mortario lapideo cum pistillo ligneo, emulgendo sensim affunde

Aquae fontanae fervidae

(or, Aquae nucum coci viridium) \mathfrak{zjij} .

Cola.

(Admisce Olei ricini $\mathfrak{z}\beta$.)

S. Half a tablespoon-ful or one to be taken every 1 or 2 hours.

This emulsion is preferable to almonds-milk for Indian patients, on account not only of its gentle purging virtue, but also because almonds sent from Europe are often spoiled. The fresh milk of *cocoa-nuts* or an emulsion of the seeds of *Catappan* (*Terminalia Catappan* and *Moluccana*) may answer the same purpose. Vd. B. II. Sect. II. No. 36, 37, 38 etc.

7.

Pulvis mercurialis compositus.

Rec. Calomel gr. jv - vj - vjij.

Sulphuris antimonii praecipit. gr. $\frac{1}{2}$.

Pulveris gummosi

Pulveris sago ana 3β.

(Laudani liquidi gutt. j.)

M. f. pulvis. Divide in vjij-xij partes aequales.

S. One powder to be administered every 3 or 4 hours (to infants from 1 to 3 years old).

Gum-powder soon melts within the tropics, this is the reason that I recommend the addition of a little powdered sago or root of marsh-mallow. Vd. B. II. Sect. II. No. 37, 38, 39 etc.

8.

Decoctum radicis Psidii pomiferi.

Rec. Radicis psidii concisae 3β.

Coque cum

Aquae fontanae 3jv - vj.

Colaturae 3jj - jjj expressae admisce

Gummi Indici 3β.

Sacchari albi 3j.

M. S. One, two or more teaspoon-fuls to be administered every 4 or 5 hours.

The Malay name of this root is „akar yamboo bedje or goyaves.“ Vd. B. II. Sect. II. No. 39.

9.

Decoctum radicis Coryphae umbraculiferae.

Rec. Radicis coryphae recenter siccatae et
concisae ℥ij.

Coque cum

Aquae fontanae ℥vj.

Colatura ℥jjj expressa

S. Two or more teaspoon-fuls 3 or 4
times a day.

The Malay name of this root is „bongol
bas.“ Vd. B. II. Sect. II. No. 39.

10.

Extractum corticis { *Swieteniae* } *febrifugae.*
 { *Cedrelae* }

Rec. Extracti cedrelae gr. iij.

Gummi Indici ℥β.

(or, Gummi Arabici ℥j.)

Sacchari albi ℥j.

Solve in

Aquae fontanae ℥j-ijβ.

M. S. One or two teaspoon-fuls 3 times a day.

The bark affording this extract is called
„kayoo sooren“ in the Sunda-idiom. It is pre-
pared in the same manner as *extractum Absyn-*
thii. Vd. B. II. Sect. II. No. 39.

11.

Decoctum chartae lacteum.

Rec. Chartae tenuissimae et albissimae minutim concisae ℥j.

Coque cum

Lactis vaccini q. s.

ad consistentiam pulpae,

cui adde

Lactis vaccini ℥vjjj.

Continua coctionem

usque ad solutionem chartae.

S. A few teaspoon-fuls every 2 or 3 hours.

Vd. B. II. Sect. II. No. 42.

12.

Cremor tartari cum magnesia.

Rec. Cremoris tartari ℥jjj.

Magnesiae carbon. ℥β.

Sacchari albi ℥j-jj.

M. f. pulvis.

S. One teaspoon-ful every 2 or 3 hours.

Vd. B. II. Sect. II. No. 46. Sect. III. No. 50.

etc. —

13.

Nitrum aqua nucum Coci solutum.

Rec. Nitri depurati gr. vj.-x.

Aquae nucum coci viridium ℥ijj.

M. S. Half a tablespoon-ful every 2 or 3 hours.

Vd. B. II. Sect. II. No. 46.

14.

Extractum foliorum Daturae fastuosae.

Rec. Extracti folior. daturae gr. j-jj.

Aquae foeniculi ℥j.

Syrupi gummosi ℥jj.

M. S. One teaspoon-ful every 4 or 6 hours.

The Malay name of these leaves is „*daun ketjoobong*.“ The extract is prepared in the same manner as *extractum Hyoscyami*, but it loses its efficacy, when kept longer than three months.

Vd. B. II. Sect. III. No. 51.

15.

Pulvis anthelminthicus.

Rec. Seminis santonici ℥jj.

Radicis valerianae ℥j.

Radicis jalappae ℥jj.

Florum zinci ℥β.

M. f. pulvis. Divide in vj.-jx.-xjj partes aequales.

S. One powder to be taken 2 or 3 times a day.

The above composition is to be divided into *six* parts for a child above *eight* years: into *nine* for a child between *six* and *eight* years; into *twelve* for a child between *four* and *six* years. One powder should be given before breakfast, some *castor-oil* having been taken the night before; a second powder three or four hours afterwards; and a third, if deemed necessary, about the evening. — Instead of zink-flowers some *calomel* may be added. — B. II. Sect. III. No. 69.

16.

Pulvis antiherpeticus.

Rec. Radicis Asclepiadis giganteae gr. vj.

Aethiopis antimonialis gr. xjj.

Magnesiae ustae

Sacchari albi ana $\Theta\beta$.

M. f. pulvis. Divide in jv partes aequales.

S. A powder to be taken *once* or *twice* a day.

The ingredients of this receipt are proportioned to a child three or four years old. — The root of *Asclepias gigantea* is called „*akar wadoore*“ in Malay. Vd. B. II. Sect. IV. No. 80.

17.

Liquor muriatis cupri.

Rec. Sulphatis cupri ammoniati $\mathfrak{z}\beta$.

Aquae destillatae $\mathfrak{z}\text{iv}$.

Acidi muriatici puri q. s.

ut post finitam praecipitationem liquor viridis fiat pellucidus. Servetur ad usum.

*

Rec. Liquoris muriatis cupri $\Theta\text{j} - \mathfrak{z}\beta - \Theta\text{jj}$.

Aquae destillatae $\mathfrak{z}\beta$.

M. S. One dose to be taken every other day, immediately after dinner.

The dose is to be increased a drop each time, and lest any part of it should be lost, it would be better given in a spoon-ful of tea or sweet wine. — Vd. B. II. Sect. IV. No. 83.